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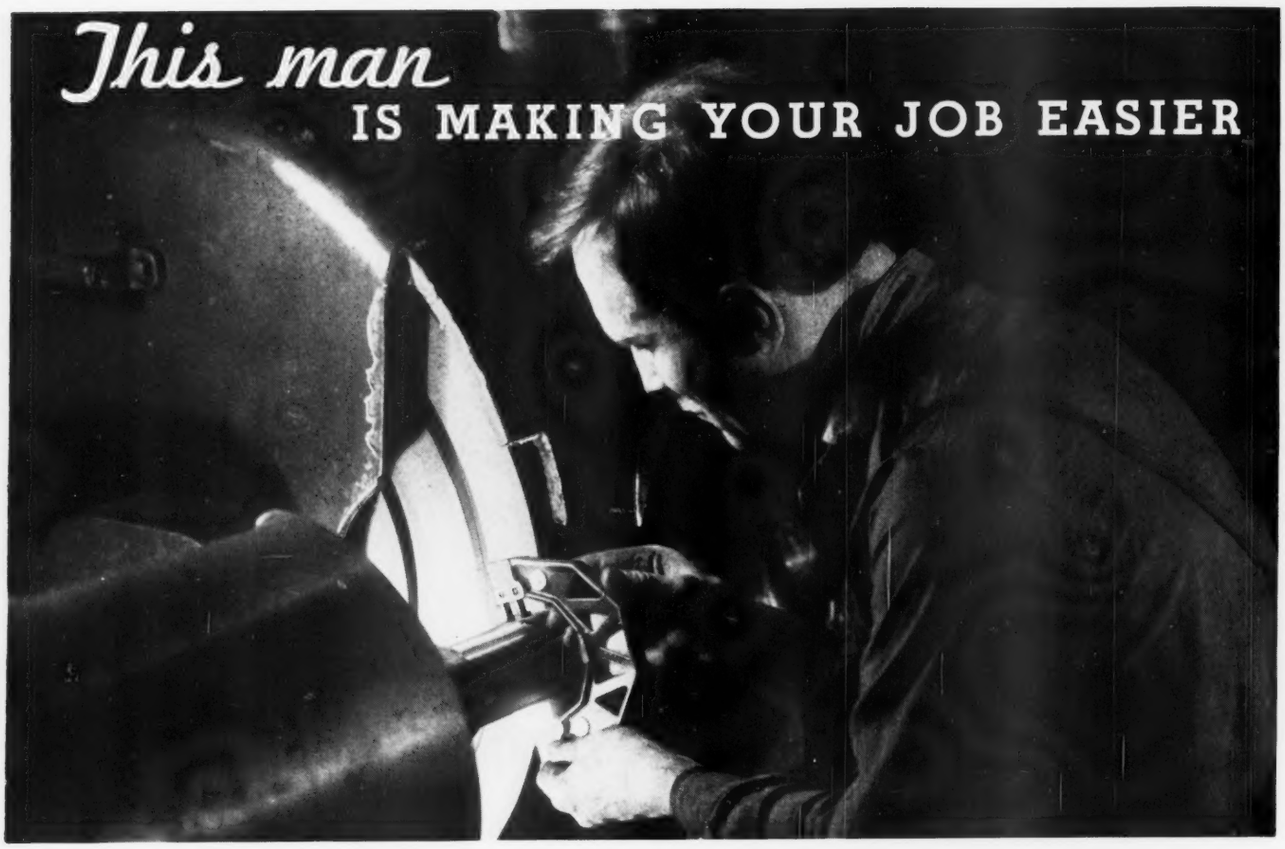

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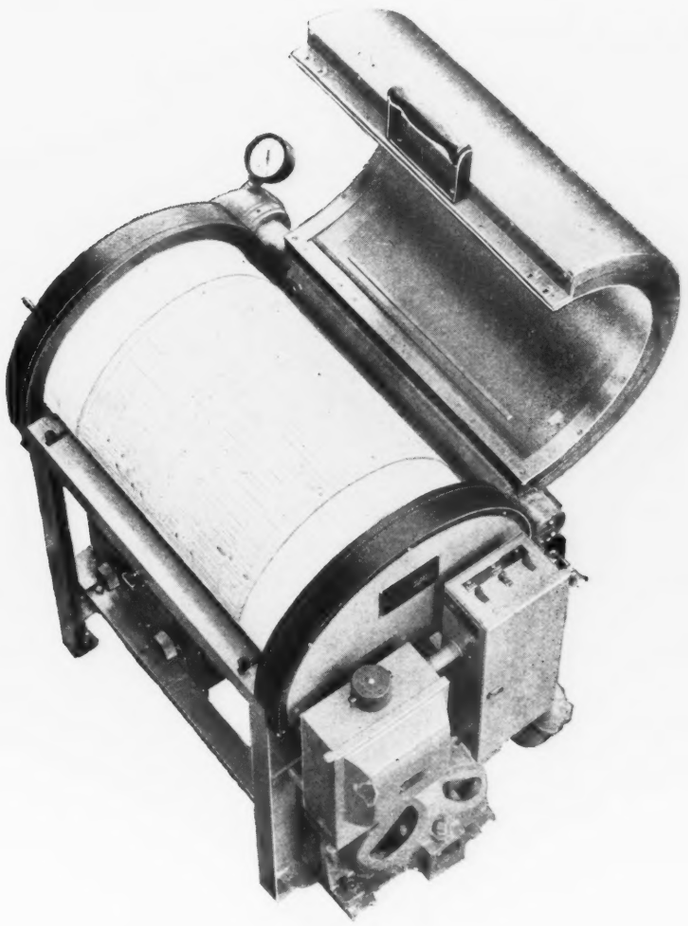

The AUTOFORMER is the most **Alert Watchman** in the printing machinery industry—mechanically **Checking Every Square Inch** of a dry mat for **Casting Defects**—Immediately bringing all casting defects to **A Common Level**—and holding them until the fibers of the dry mat are permanently set—by controlled **Electric Bone Drying**—ready for any type casting units.

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All we ask is that you investigate this **Miracle Machine**—The Autoformer—79 Publishers operating 102 machines can testify to its **Amazing Performance**—and its **Unusual Economy In Production Costs.**

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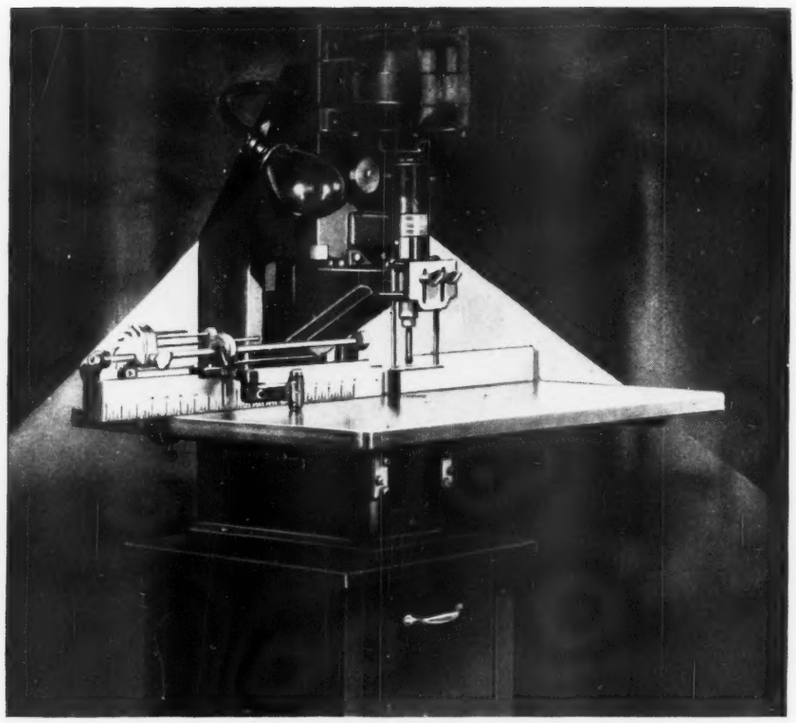

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WOOD

ON TIME—WEEK AFTER WEEK
THANKS TO
ALEMITE

Alemite Solves High-Speed Printing Problems

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Below: Every one of these knuckles on the inking rolls is quickly lubricated through Alemite Fittings with Alemite Guns.

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● Every week the gigantic Hoe of the Acme Press pours out millions of magazine pages without a hitch or delay. Hour after hour the rolls and cylinders spin on bearings that must have positive lubrication. And week after week this gigantic press continues to get "Radio Guide" to its millions of readers on time, because it is lubricated with Alemite Temprite Lubricants and Alemite Lubrication Equipment.

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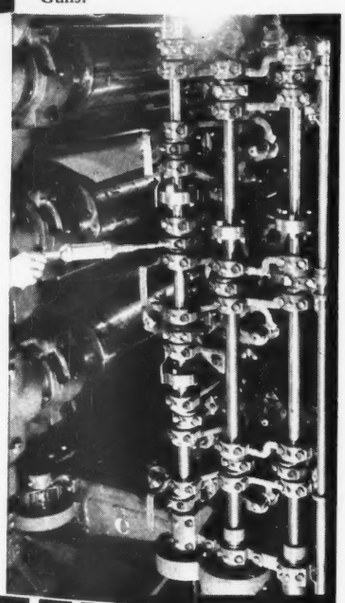

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equipped with HOE *Full Speed Pasters and* HOE *Electrically Controlled Automatic Tensions*

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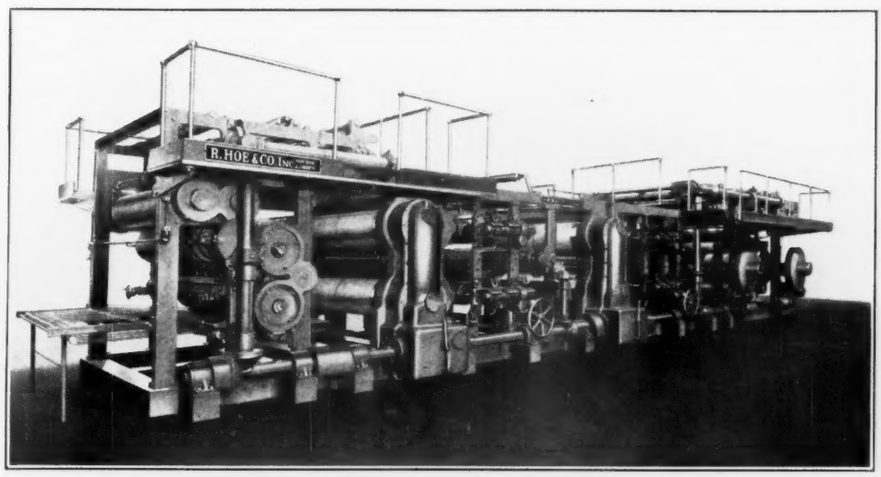

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Steel plate and impression cylinders mounted in SKF preloaded large-capacity, self-aligning roller bearings.
Anti-friction bearings throughout.
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Oil tight guards with forced lubrication.
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Result In HIGHER SPEEDS

12,000 cylinder revolutions an hour.
Continuous operation.
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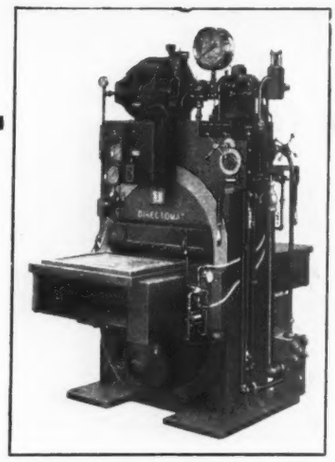

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Register

On Flat-Bed Cylinders a Problem of Inertia and Momentum

By Sam'l Oppenheimer*

I READ with interest the article by Alton B. Carty in the June issue of *Printing* Equipment *Engineer* on the failure of cylinder presses to give perfect register where the speed of the press is varied. I fully agree with Mr. Carty that constant and unvaried speed is necessary to secure register on cylinders of all kinds, but I cannot quite agree as to the cause of variation. Mr. Carty attributes the variation of register to variation of position of the gears before the grippers take the sheet and until the cylinder again lowers on to the bearers, if I understand the article rightly. The rise of the cylinder brings the gear above the pitch-line and thereby allows a certain amount of "lash" or "lost motion" in these gears. This, of course, is true; but if this "lash" or "lost motion" were the cause of failure to obtain register, then it is obvious that it would be impossible to obtain register at any speed, because this same action takes place at every speed of a two-revolution press, but it is corrected at every impression by register-rack and bearers.

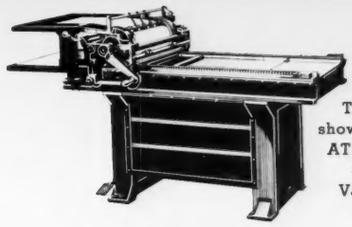
Unquestionably, there is back-lash or lost motion in every pair of gears after they have been run a while. When a set of convolute spur-gears is new and are perfectly and correctly cut and set so as to travel exactly on pitch line, there is practically no lost motion in them. Their convolute formation is such that when they are meshed true to the pitch line, one convolute "hump" rolls over on the other without any considerable amount of friction, just permitting the preceding tooth to leave and the succeeding tooth to enter, with scarcely any open space or any friction taking place. They do not strike together on the ends of the teeth, but come together on the convolute "hump" at the pitch-line and roll over almost like a roller bearing. I say *almost* like a roller bearing, because, if there were absolutely no friction in a pair of gears, there would be comparatively no wear, and we all know that gears do wear in time, and this wear of gears, plus the lifting of the cylinder gear out of pitch-line each alternate impression sets up a number of problems of synchronism of movement between bed and cylinder, which has to do with register between bed and cylinder, but not with the taking of the sheet by the grippers. A press may very well give perfect register between bed and cylinder, and yet not register at all on the sheets to be printed, and it might, and often does register between bed and cylinder on several different speeds, which would prove that it is not the gears that have to do with register of sheets being printed on a cylinder press when the speed is either accelerated or diminished. The reason a press does not register in printing sheets when the speed is varied is entirely a problem in inertia and momentum—inertia of the sheet and momentum of the cylinder. The sheet is lying still and the grippers must take it "on the run," as it were, and the more you accelerate the speed after having set the sheet, the closer to the edge the grippers will take it. There is a certain amount of slippage connected with the gripping of the sheet "on the

Continued on Page 36

*President, The Ohio Press Printing Company, Cincinnati, Ohio.

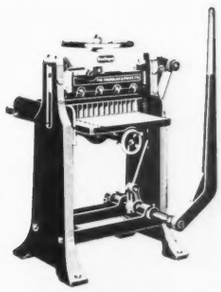
ATF carries all sizes both treadle and rotary perforators

ROSBACK TREADLE PERFORATOR



The model shown is No. 320. ATF carries 28 different Vandercook models

VANDERCOOK PROOF PRESSES



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$295. F.o.b. Elizabeth, N. J.

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Of course the ATF Saw makes chips, but you never see them. The specially designed guard deflects ALL chips into the waste hopper. With the blade guard in place, there are no flying chips to annoy the operator and damage other machinery.

THOSE EXTRA 12 PICAS

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Mitering of rules, with one end face-up and the other end face-down, involves no calculations; no gage setting. The rules locked in position and not depending on hand guidance are mitered with unfailing accuracy. The device slips into operating position without use of screws or tools.

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Moving sources of danger . . . the belt and the motor . . . have been enclosed within the pedestal where they can do no harm. The trimmer knife grinding wheel and saw blade are well shielded. As well as providing safety, these features enhance the saw's appearance.

A DEMONSTRATION

Like all practical men, you'll appreciate these improvements in saw design most when you see them in operation; when you manipulate these time-saving, labor-cutting improvements with your own inquiring fingers. Your ATF branch will be glad to arrange for a working demonstration at your convenience. Ask an ATF man about it. You'll find more saw value than you ever thought could be produced at this low price.

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SEPTEMBER 1935
Volume 50 Number 6

Printing EQUIPMENT Engineer

Trade-Mark Registered U. S. Pat. Office

Published by Don Will
Edited by Mac Sinclair

A Technical Publication for Mechanical Executives Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Fields.

Established 1910

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Share Your Knowledge With Others

The key men in your organization will appreciate looking over the pages of this magazine. Perhaps one of them will be able to put some particular technical idea to good use in your plant.

Place a check mark in each square for attention of the department head or assistant whom you wish to look over special articles in this issue.

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- ☐ *Chief Composing Room Machinist*
- ☐ *Monotype Department*
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- ☐ *Foreman Lithographing Department*
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- ☐ *Superintendent Electrotype Department*
- ☐ *Superintendent Press Room*
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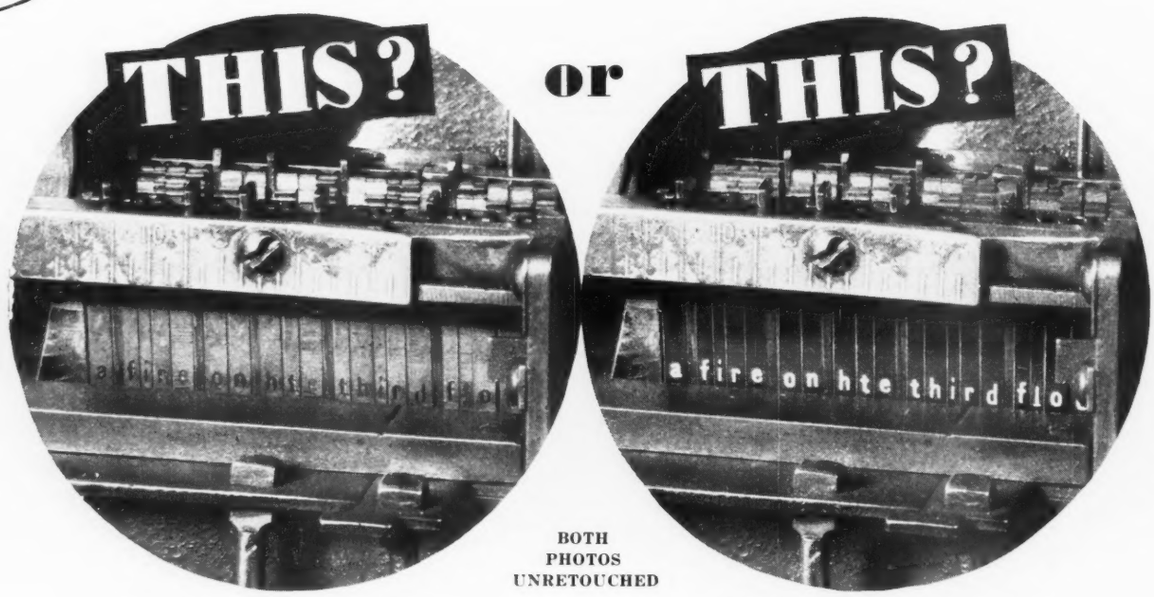
If *You* were an operator which would you prefer . .



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Craftsmen's Convention

By JOHN E. COBB*

Election of Officers

Election of officers at the Cincinnati Convention of the International Association of Printing House Craftsmen brought the logical advancement of the first and second vice presidents and the nomination and election of a new third vice president. The results were:

PRESIDENT, *John B. Curry, Boston, Mass.*
FIRST VICE PRESIDENT, *Clarke R. Long, Washington, D. C.*
SECOND VICE PRESIDENT, *George J. Marshall, Toronto, Canada*
THIRD VICE PRESIDENT, *John M. Callahan, Cincinnati, Ohio*
SECRETARY, *L. M. Augustine, Baltimore, Md.*
TREASURER, *Mark A. Mullee, Newark, N. J.*

CINCINNATI opened wide its portals to welcome delegates from all corners of the United States, and the Provinces of Canada to the Sixteenth Annual Convention of the International Association of Printing House Craftsmen, August 25-26-27-28, at the Netherland Plaza Hotel. A decisive indication of the trend toward better times is found in the splendid registration record—since 37 clubs were represented—with a total registration of 684. This is the largest registration since 1929, when Toronto topped the record with 731.

SUNDAY, AUGUST 25

Sunday was a busy day for the Registration and Information Committees. The day was spent by early arrivals in seeing as much of Cincinnati as possible. Local Craftsmen with automobiles gave a demonstration of cordial hospitality.

MONDAY, AUGUST 26

Promptly at 9:00 o'clock the Convention opened in the Hall of Mirrors, a setting that will be remembered as one of the most beautiful rooms in which the Craftsmen have convened. The meeting was marked by a large attendance of women who added charm and color to the event.

The meeting was called to order by John M. Callahan, General Chairman of the Convention. Invocation was given by Rev. Wm. P. O'Connor, Past National Chaplain of the American Legion. The assembled Craftsmen then sang "The Star Spangled Banner," and "God Save Our Gracious King." The address of welcome was delivered by Hon. Edward B. Imbus, Vice Mayor of Cincinnati.

CONVENTION OFFICIALLY OPENED

The Convention was officially opened with the introduction of Thos. E. Cordis, San Francisco, International President, by Theo. C. Dorl, president of the Cincinnati Club. President Cordis expressed deep gratification for the advancement of the organization. This was made possible by a group of individuals actuated by a common motive. Ground work for further progress has been laid. In the performance of the real work ahead, he expressed confidence in those who were to succeed him.

The official family was introduced, Second Vice President Clarke R. Long, Washington, gave the Response to Address of Welcome.

COMMITTEE ASSIGNMENTS

Appointment of committees was made. Under the methods practiced every club is represented on each of these committees, giving delegates an understanding and comprehensive cross-section of the work and activities of the International.

PRESIDENT'S REPORT

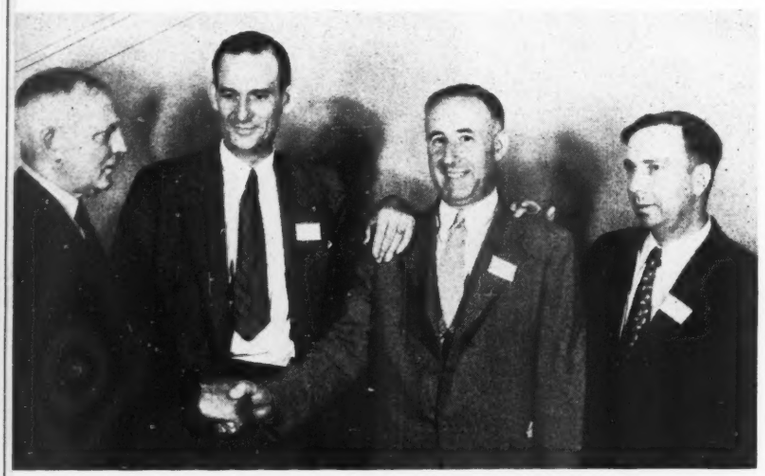
President Cordis presented his annual report early in the program in order that ample time would be had to

• JOHN B. CURRY, *President*

*Composing Room Director, Western Printing & Lithographing Company, Racine, Wis.

Left to Right: Wm. D. Hall, Washington, D. C., Chairman International Technical Advisory Committee; R. O. Vandercook, Chicago, of the Vandercook organization; Charles W. Pitkin, President, Pittsburgh Club of Printing House Craftsmen, and Harry N. Mellor, Secretary, Pittsburgh Club of Printing House Craftsmen.

Left to Right: Fred J. Hagen, Chicago, member International Board of Governors and Past President of the International Association of Printing House Craftsmen; Thomas E. Cordis, San Francisco, retiring International President; L. M. Augustine, Baltimore, International Secretary, and Walter B. Patterson, Brooklyn, of the Mergenthaler organization.



Left to Right: Hon. Geo. H. Carter, Washington, D. C., former Public Printer, now of the Monotype organization; Edward Bush, President, New York Club of Printing House Craftsmen; Joseph Kearney, Vice President, Boston Club of Printing House Craftsmen, and Hec Mann, Typographical Director, Kable Bros. Company, Mt. Morris, Ill.

deliberate upon the recommendations he was leaving in the hands of the new administration.

His recommendations are as follows:

The part played by the *Share Your Knowledge Review* in the development of membership, technical education, and fraternal phases of the Association is first in importance. The *Review* should be maintained upon its present high standard.

Through legislation the membership classification of "Advancing Craftsmen" should be given serious consideration, as the salvation of the organization is in finding a means for bringing into the Craftsmen's organization younger men.

Importance of District Conferences as direct contact agencies with International development. District Representatives to make reports of all conference plans, and programs to International President. That reports of conference be made to International Officer in charge of district.

An International Membership Card should be designed and issued to individual members through Clubs of the jurisdiction. This will instill a spirit of individual pride in possession of a membership in the International.

Organization of the Technical Institute of Graphic Arts should progress as steadily as possible. Activities of past year crowded out plans for the definite organization of this research committee.

Date of the Annual Convention recommended earlier in the month of August.

The work of the International Craftsmen Editorial Bureau was highly commended. Club bulletins play an important role in Club development, and should be maintained on a high standard of editorial content.

The appointment of an International Historian was recommended.

The work of the Educational Commission, under the leadership of DeWitt A. Patterson, Chicago, was highly commended. The Educational Commission's program has developed a tangible source of technical education which is available to every club in the International.

Cincinnati Club Conducts Meeting

The Monday Afternoon program was held as the regular monthly meeting of the Cincinnati Club of Printing House Craftsmen. Theo. C. Dorl, president, presided. The educational feature of the meeting was an address on "Lithographic Research" by Prof. Paul W. Dorst, of the Research Dept., Lithographic Technical Foundation, University of Cincinnati.

TUESDAY, AUGUST 27

Officers' Reports

Reports of all officers, with the exception of the President, were presented at the convention in printed form.

WEDNESDAY, AUGUST 28

Report of Educational Commission

Chairman DeWitt A. Patterson, of the Educational Commission, stated that in the year just passed he had acquired a new slant on the problems of the educational work of the International. The setup is perfected and the programs will be manifold in their educational and research value.

He noted also he had made the discovery that Craftsmen's Clubs are like men—they have traits, habits, temperament and character. The program that goes

Minneapolis in 1936

Craftsmen from three cities presented cordial invitations to entertain the International Association of Printing House Craftsmen's Convention in 1936—Newark, Memphis, and Minneapolis. Each waged an enthusiastic campaign right up to the closing session. Minneapolis came through with a wide majority.

over well in one club will fail in another club. There is sectional variation in these phases that must be carefully analyzed.

The TVO (Technical, Visual, Oral) Exhibit has been enthusiastically received. Each exhibit is a worthy demonstration of what can be accomplished by active Craftsmen co-operation.

The Speakers Bureau, which is being organized, will be centrally controlled, and is expected to solve the problem of successful programs for many clubs.

A new setup for the Educational Commission will be announced soon. The burden is too much for one man to give the constructive thought and work demanded.

Convention Summary

The Sixteenth Annual Convention was given a comprehensive summary by John J. Deviny, Executive Vice President of the U. T. A., and an active Past President of the International Association.

Entertainment Program

The entertainment program throughout the convention for the ladies and visiting Craftsmen was of such generous nature as to cause appreciative comment.

The Banquet, Show and Dance

The climax of the entertainment program was reached Tuesday evening when the Pavilion Caprice, at the Netherland Plaza was opened for the Annual Banquet and Ball. The room afforded a beautiful setting. An excellent dinner was followed by the introduction of President Cordis, who was presented with a Rookwood Vase. This is the original vase which was used in preparing the feature design on the cover of the June

The floor show was elaborate.

The Cincinnati Convention entertainment committee went one step further than has been the practice at previous banquets. Not only were speeches eliminated but no special table was set for officers and other luminaries of the printing fraternity.

1935 Souvenir Book

The Souvenir Book for 1935 convention was contributed by the Milwaukee-Racine Club of Printing House Craftsmen. The book is a deluxe edition of the Craftsman Ritual written in 1924 by William H. Badke, a past president of the Milwaukee-Racine Club. Following the ritual is the Craftsman Creed, written for the Milwaukee-Racine Club by Dr. Frank Crane, shortly after the organization of the Club. Preceding the ritual is the Craftsman Invocation, written some years ago by Henry Lewis Bullen. The volume is 6½ in. by 9¼ in. and is full bound in chocolate chervel with gold stamped title. This keepsake edition is limited to five hundred copies.

International Historian

President-elect John B. Curry named Past International President Harvey H. Weber, Buffalo, as International Craftsman Historian. The Craftsman Manual is an authentic history of the Association up to 1932. It was compiled by Harvey H. Weber, and published as part of the program of the Educational Commission.

Share Your Knowledge Review

The *Share Your Knowledge Review* under the capable co-editorship of Haywood H. Hunt, and Frank McCaffrey, has made history in the field of organization publications. Its editorial content, technical and inspirational articles, the fine craftsmanship of its typography and format, the excellence of its covers and inserts, have all contributed to an outstanding publication. International President John B. Curry announced that the *SYK Review* would continue under the able guidance of Craftsmen Hunt and McCaffrey.

Certificate of Appreciation Adopted

Five years ago Craftsman T. R. Cregeen, Montreal, introduced to the International convention, a plan for issuing a Certificate of Appreciation to retiring officers of local clubs, the certificate to be issued by the International through local clubs. This year the certificate was approved, the entry from the New York Club being selected. These certificates will be supplied by the International Secretary at a nominal charge.

Clark R. Long, Washington, D. C., was elected First Vice President of the International Association of Printing House Craftsmen.

John M. Callahan, Assistant Superintendent, The United States Printing and Lithographing Co., Cincinnati, elected Third Vice President of the International Association of Printing House Craftsmen.

George J. Marshall, of Toronto, Canada, was advanced to the office of Second Vice President of the International Association of Printing House Craftsmen.

DeWitt A. Patterson, Chairman, Educational Commission, whose TVO Exhibit created enthusiastic interest at the Cincinnati Conference of the International Association of Printing House Craftsmen.

Program of Addresses

By JOHN E. COBB

The addresses presented before the Sixteenth Annual Convention of the International Association of Printing House Craftsmen at Cincinnati were widely diversified. Two of the lectures were presented with the aid of charts, lighting effects, etc., without which the printed text cannot be given in full value. The following paragraphs give the title, speaker, and brief comment:

"The Arch of Printing Development," by A. H. Kelley, President, Memphis Club. As Mr. Kelley opened his talk there was unveiled a large symbolic painting titled "The Arch of Printing Development." The foundation was Paper, Design, and Inks. Design was made the keystone of this unit. The arch was built of stones, each stone carrying the name of a major department in the Graphic Arts Industries, Relief, Intaglio and Planographic Printing, Artists, Typography, Engraving, Electrotyping, Photography, Photoengraving, Binding, and Selling. Through the arch a stairway is shown with men groping from the dark era to that of enlightment. The keystone is emblazoned with the Craftsman emblem, and the slogan "Share Your Knowledge."

"Advertising Layout and Design," by Wm. H. Badke, Copy and Art Director, Olsen Pub. Co., Milwaukee, who delivered an exhaustive talk. He presented, comprehensively, a basic analysis showing why design plays such an important part in printing. Craftsman Badke illustrated his talk with advertising and design specimens to prove his findings on proportion, eye travel, and many phases of correct principles applied to design and layout.

"Meinograph Process," by A. T. Wickham, President, Meinograph Sales Corporation. The process is a new method of making color plates. The advantage of the process to the printer is the lack of detail in the yellow, blue, and red plates, which eliminates the problem of exact register. Method of color separation offers plate-making economies.

"Lithographic Research" by Prof. Paul W. Dorst, Research Department, University of Cincinnati. An exhaustive paper on what the lithographic industry has accomplished through organized research.

"Craftsmanship" by Hon. A. E. Giegengack, United States Public Printer. A very able address giving in well defined statements the fundamentals, serious purposes and achievements of Craftsmen. He gave some very interesting statistics on the volume of work handled at the G. P. O. and also on the proposed new printing plant for Uncle Sam. Further details appear elsewhere in this issue.

"Rollers" by Frank H. Stevens, Jr., President of the National Association of Printers Roller Manufacturers. An excellent non-technical address about roller problems, what rollers are for, what service they render. The speaker compared them to rubber tires on the automobile —they are relative in mileage and the transportation business since they carry ink. He asserted there is no such thing as roller suction and that there is no perfect roller. Roller performance, largely, is a matter of roller care and maintenance.

"The Mystery of Colors" by Prof. John F. Earhart, University of Cincinnati. Prof. Earhart's lecture was remarkable, but being delivered largely by demonstrative means such as light and charts, and the movement of the charts and colors, there is little that can be written.

"What the Employer Expects from His Foreman," by William Sleepeck, Chicago. Mr. Sleepeck's address was inspirational, and carried potent thoughts for his listeners to take home with them. The foreman should work *with*, not *for*, his employer. He should also be kind, loyal, punctual, courageous, accurate, aggressive, ambitious and should be an orderly thinker.

"Problems of the Pressroom, and How to Overcome Them," by Summerfield Eney, Jr., of The Champion Coated Paper Co., dealt with practical pressroom problems solved by practical men. Mr. Eney's experience in paper mills has been confined largely to ink and paper problems in the pressroom.

Two Companies Consolidate

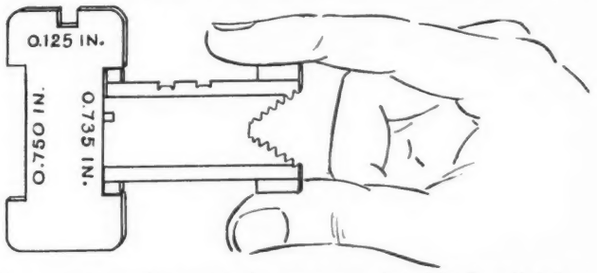
The Champion Coated Paper Company, Hamilton, O., and the Champion Fibre Company, Canton, N. C., have been consolidated. The name of the new organization will be the Champion Paper and Fibre Company. Officers of the new company are: Alexander Thomson, chairman; Logan G. Thomson, president; R. B. Robertson, sr., executive vice president; H. W. Suter, vice president and sales manager; R. B. Robertson, jr., vice president; Clarke Marion, vice president; Scott Zoller, secretary and treasurer; J. L. Henson, controller and assistant secretary; C. S. Bryant, assistant treasurer and W. J. Damtoft, assistant secretary.

Gauge

For Testing Worn Condition of Line Composing Matrices

By RUSSELL CALKINS*

REGARDING the article in a recent issue of *Printing* EQUIPMENT *Engineer*, headed "When to Discard Matrices", I believe close attention to the causes mentioned in the article would result in elimination of much ordinary distributor trouble. This is especially true of difficulties caused by the wearing away of lower lugs of matrices. My own experience shows that on some line-composing machines more distributor stops will result from this particular cause than on others. This is due to slightly different adjustment of the channel entrance and a worn condition of the magazine entrance. As was stated in the article referred to above, when lower matrix lugs have become worn from 0.020 in. to 0.025 in. under the original 0.750 in. measurement, the matrices should be discarded.



Line-composing machine matrix lug snap gauge devised by Russell Calkins, machinist in Lima (O.) News composing room. By means of the 0.735 in. recess it is possible to determine quickly whether matrix lower lugs have become worn sufficiently to discard the matrix so it won't cause trouble by clogging in the channel or magazine entrances. This gauge is also a means for maintaining better matrix letter alignment since the 1/8 in. recess in the top of the gauge can be used for testing the alignment dimensions of the lower matrix lugs.

To determine this accurately, I have designed a simple pocket snap-gauge, with which a machinist can detect easily and quickly which matrix of several has caused a distributor stop.

My gauge is fashioned from a piece of a 9-point liner, and can be made by any machinist in a short time. It shows quickly if a matrix has been worn away as much as 0.015 in., and if the matrix has tilted at the magazine entrance, it is promptly discarded.

As the drawing indicates, the cut-out in one side of the gauge is 0.735 in., while the opposite cut-out space is 0.750 in., and on one end is cut out the original size of a lower matrix lug as to height, or 0.125 in.

When using the gauge, the mat or mats (at span of lower lugs) which slip into the 0.735 in. space should be discarded, as they will frequently cause trouble. Fonts long in use may be gone over and the bad mats eliminated at one time, thus avoiding future trouble and delay. It will also be found that better alignment will result if these worn mats are discarded, and in practically all instances trouble with mats riding the channel plate between the magazine channels will disappear.

Occasionally, use will be found for the 0.750 in. size side of the gauge in determining if a matrix, at upper or lower lugs, has in some manner become burred or spread beyond the original measurement, thus preventing its free passage through the magazine.

*Machinist, Lima (O.) *News*.

Offset

Of First Impression Printing Discussed by Executive[1]

By JOHN J. SHEA*

I WAS interested in the article entitled: "Problem of Poor Appearance of First Impression Newspaper Printing," as submitted by Messrs. Dodge and Baumrucker, in the August issue of *Printing* EQUIPMENT *Engineer*. The reasons given and explanations submitted are clear, concise, and very readily grasped.

I am pleased to see this subject discussed. We are all concerned about first impression printing and are interested in ways to improve it, and I know some of us have discovered remedies which tend to offset the difficulties encountered with first impression printing.

Two suggestions have been made as a means of bringing the standard of first impression printing to the standard of the second.

The first suggestion deals with web control and the different types of tensions as used today. This thought is sound and important, but tension alone will not remedy other troubles encountered here. We know that the first impression is doing ninety percent of the pulling or unwinding of the roll, not only against the roll weight but also against a heavy tension in most cases, and this action in turn feeds the second impression. Following this thought further, it is logical to assume that if we carry a roll tension sufficient only to control the web while in the unit and from there on depend on drag rollers and drag roller trollies as well as nipping rollers to control the sheet from the time it leaves the unit until it reaches the cutting and folding cylinders, we will lessen the wipe or slur to a great extent, lessen roll tension, and lessen power demand. Another important consideration here is to maintain as evenly as possible equal traveling surface speeds of the plate and impression cylinders. It is necessary also to check the manner in which rolls are wound, to eliminate tight ends and baggy, creasing centers, and when these defects are noted to immediately contact the paper mill superintendent so these conditions can be corrected in order to help obtain a cleaner and sharper first impression print.

The second suggestion offered deals with the development of a quicker setting ink and finding an ink repellent blanketing material. Both of these thoughts are worthy of much consideration.

A quicker setting ink would diminish the deposit on the second impression blanket. Those of us who have operated different types and styles of presses know that as the distance travelled by the sheet between the contact points of the first and second impression is lengthened, the amount of the ink accumulating on the second impression blanket lessens.

The reference made by Messrs. Dodge and Baumrucker to blanketing material is sound. We have found that certain press blankets and top sheets retain and permit a building up of ink or carbon residue much more so than some others, and this condition greatly increases the offset print effect.

But let us go a little further. Paper also enters into the question of improving first impression printing. A noticeably coarse wire finish will cause pressmen to try to offset this poor finish by carrying excessive ink which again results in building up the ink accumulation on the second impression blanket. It is also true that a too-hard paper finish (one which is slow in absorbing the ink) will cause an excessive accumulation on this same cylinder. The question of the grade of ink in relation to the quality of newsprint being used is also very important.

Another way to minimize this offset condition is by seeking the co-operation of the layout department in placing the type of ads or the grouping of halftones or art layouts on second impression pages. This offset condition is most noticeable in halftone areas which range in tone between the high-light and the solid, and as less than half our ads are of this type of makeup this arrangement is not impossible.

One other thought is as follows: When you have determined what was thought to be strike-through, as offset printing, cut the ink supply on the *first impression* rather than cut the second impression supply to reduce this damaging effect.

*Production Manager, Worcester *Telegram* and *Gazette*, Worcester, Mass.

[1]Editor's Note—The article written by Messrs. Dodge and Baumrucker and printed in the August issue of *Printing* EQUIPMENT *Engineer*, was presented by the writers primarily to summarize the factors influential in the problem of newspaper first impression printing. The authors expressed the wish that the summarization would be the means of stimulating thought and action in the matter.

This troublesome problem has been the subject of investigational work by newspaper mechanical executives from time to time. Approximately two years ago, tests with respect to the causes for newspaper first impression offset were conducted by John J. Shea, Production Manager of the Worcester *Telegram* and *Gazette*, and by Myron Taylor, Pressroom Superintendent of the Charleston (W. Va.) *Gazette*, both of whom submitted reports and specimens to W. E. Wines, manager of the A.N.P.A. Mechanical Department. There was also some discussion on the subject at the 1934 St. Louis Mechanical Conference.

Intertype Egmont

The new type known as Egmont, designed by S. H. de Roos, of Amsterdam, Holland, is now available in Intertype matrices. It represents a radical departure from the current type styles, being designed after the more conventional types which have always formed the foundation of fine typography.

THIS PARAGRAPH is set
in the new 12 Point Intertype
Egmont Light *with Italic* and
SMALL CAPS QJ $1234567890

Specimen characters of the new type face designed by S. H. de Roos of Holland, have been made available for the machine by Intertype Corporation.

Egmont is characterized by long ascenders and a unique treatment of the serifs in certain letters. It is believed this face is destined to be an important element in the approaching transition to a more brilliant style of type design.

Intertype Egmont is being furnished in two weights, light and medium, and is duplexed with its companion italics in sizes from 8 to 14 pt. True-cut small caps are available. The Intertype size range will also include 18 and 24 pt. in both Roman and italic.

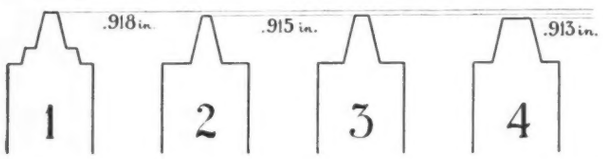
A folder showing specimen settings in the 10 and 12 pt. sizes of Egmont will be sent upon request to any reader of *Printing* EQUIPMENT *Engineer*.

The Leader Problem

IN BOTH commercial and newspaper printing, and particularly in the latter, the tendency of leaders to punch through the paper has long been a troublesome problem. Many mechanical executives in both kinds of plants have studied this problem with a view to eliminating the rows of unsightly embossed dots.

As is obvious, one and two round-dot leaders do not have much "land" surface to resist the pressure which occurs when the form comes in contact with the platen or the impression cylinder. In tabular work, the area immediately surrounding leader lines is open, and for this reason the leader points punch through the paper, unless care is used in makeready.

In their constant efforts to improve newspaper printing, mechanical executives try to eliminate the little



In this diagram the sections of type elements have been distorted to show the differences in various kinds of leaders.

No. 1 is the old-style round-dot leader which casts 0.918 in. or full type high.

No. 2 is the universal round-dot leader which casts 0.003 in. less than type-high.

No. 3 is the low-leader similar to No. 1 but punched 0.003 in. shallow.

No. 4 is the flat-top round-dot leader, punched 0.005 in. shallow. The flat top is said to prevent this leader punching through news stock on a newspaper printing press.

No. 5 is an "open" leader of regular weight, similar to No. 1 but punched 0.003 in. shallow, one dot per pica, with light and bold on the same matrix. It has been found that flat-top leaders measuring 0.018 in. in diameter, punched 0.005 in. shallow, give excellent service in 5½ and 6-pt. faces; flat-top leaders measuring 0.021 in. in diameter, punched 0.005 in. shallow, in 7 and 7½-pt. faces; and flat-top leaders punched 0.022 in. in diameter, 0.005 in. shallow, in faces from 8 to 14-pt.

The above-mentioned leaders are intended primarily for newspaper work. For commercial work, the No. 3 special leaders punched 0.003 in. shallow, with diameters varying to suit each individual type face, are commonly recommended. The reference numbers used in this article are the designations used by the Intertype Corporation to distinguish the various types of leaders.

imperfections which mar an otherwise splendidly printed paper. Numerous experiments have been made with leaders of various kinds to prevent punching through the paper, but old-style (typehigh) leaders and even the round-dot so-called universal or newspaper leaders (0.003 in. below type-high) persist in punching through. And it always seems to happen on a sheet which carries a nice halftone on the opposite side. In some cases the unsightly effect is heightened by ink penetration through the apex of each hole in the paper.

Some investigational work has been done by Intertype Corporation to relieve the printer of this punch-through annoyance. For the commercial shop the universal or No. 2 leaders (punched 0.003 in. shallow), as shown in the accompanying diagram, are satisfactory since they cast 0.915 in. on the type body. They show less tendency to show through on the opposite side of the sheet.

In many newspaper composing rooms the use of leaders has been eliminated entirely. In other plants, single-stroke-to-en (two strokes to the em) hyphen leaders punched 0.003 in. shallow have been used with good results. However, some editorial executives are not satisfied with these substitutes and demand round-dot leaders. The latest round-dot leader designed to meet this situation is No. 4, shown in the diagram. This leader is punched 0.005 in. shallow and has a table top like the frustum of a cone. This flat top resists more effectively the tendency to punch excessively into the mat during the molding process.

Makeready

Of Electros Eliminated in Pressroom By Use of Hengst System

By IRA D. PILLIARD

THE modern mechanical or production executive does not order hastily prepared forms rushed to the presses. On the contrary, he keeps forms off the presses until they are in proper condition to be printed. With standing and makeready time of cylinder presses rated at $6.00 and more per hour as compared with the much lower rates of the composing-room and foundry, greater economy in production is secured from pre-makeready, that is, levelling of the printing elements before the forms reach the pressroom, providing of course that the pre-makeready is done accurately and economically.

In line with this modern policy, a system for type-highing electrotypes has been developed by Fred Hengst, Manager of the Electrotype Foundry, Western Printing and Lithographing Co. Briefly, the apparatus consists of a heavy steel chase containing more than 3000 movable steel quads. It is used in conjunction with the customary lead-molding presses to be found in electrotyping foundries.

Each of the 3000 quarter-inch-face steel quads has been milled upon the working face into quarter sections to present four contact points each to the electrotype backing metal, or a total of 12,000 contacts upon a surface 12 in. by 16 in. This is equivalent to 64 contacts per square inch of surface. The sides of the quads have been recessed to admit bars which are fixed between quad rows. The bars hold the quads securely in the chase. Flexibility and independent pressure of each unit quad is obtained by milling the slots wider than the dimensions of the retaining bars.

A smooth steel plate frisket, ⅛ in. thick, is hinged to the underside of the chase to accommodate a thin cork blanket. The frisket contains small fixed metal guide posts or points to which hand-cut paper matrices

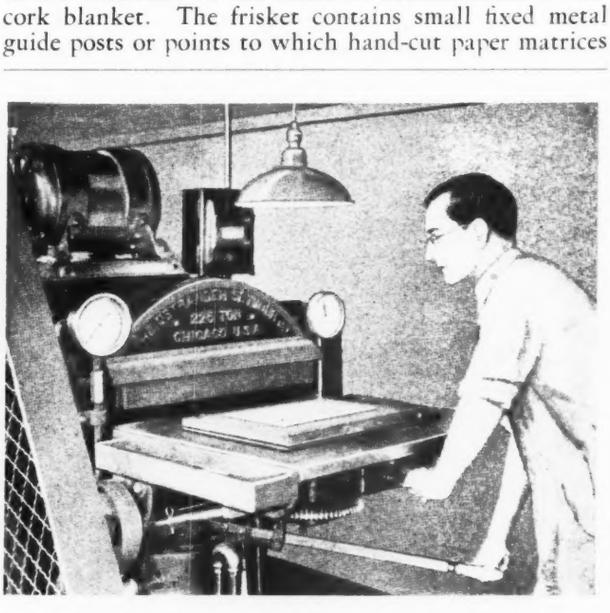


Fig. 1.—Electrotype plate contained in Hengst Multi-Unit Chase, which has been prepared as explained in Fig. 2, ready to be placed under pressure in a lead-molding press for the purpose of leveling the plate to eliminate makeready in the pressroom.

or interlays may be fed in register with the electrotype plate positioned above the quad base.

A second plate of ⅛ in. polished steel is placed upon the printing face of the electrotype plate previous to placing the complete assembly just described in the hydraulic press.

Preparing a Plate

The operations necessary to type-high and solidify a plate by the Hengst quad-base method are as follows:

1. The back of an electrotype plate taken from the rough cast is given a first cut on the rougher.

2. A proof of the plate is pulled upon 10-point coated bristol.

3. Open spaces and high-lights to which it is desired not to apply pressure are cut out of the bristol board. The board thus prepared constitutes an interlay or matrix.

4. The plate is trimmed with a saw-trimmer on two sides up to the guard lines or bearers.

5. The proof on the interlay board is trimmed with shears to the same guard marks appearing upon the proof.

5. The quad-base chase and hinged steel frisket are opened.

7. A cork blanket, to absorb the shock of the solids is placed upon the smooth steel frisket.

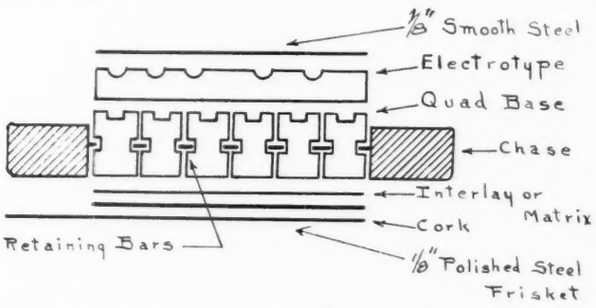


Fig. 2.—Cross-section diagram showing Hengst Unit-Base System pre-makeready assembly as used to level electrotype plates in a hydraulic press before sending the plates to the pressroom.

In actual practice, an interlay or matrix is first prepared by taking a proof of the electrotype plate on 10-point coated bristol. Sections of the bristol are then cut out, according to the appearance of the proof, to provide open spaces opposite areas in the plate which do not need solidifying, such as highlights in halftones and open areas in the plate. The interlay and cork blanket are placed between the steel plate and unit quads. The plate underneath the unit quads is hinged at one side of the chase. Means for registering the interlay and cork with the electrotype plate above the unit quads are provided. A ⅛ in. polished steel plate is placed over the printing surface and in contact with the electrotype plate. The assembly is then placed in a lead-molding press as shown in Fig. 1, and the pressure applied.

There are more than 3000 of the movable steel units which are cushioned underneath to absorb pressure on high spots. When the pressure is applied to the form in the lead-molding press, the movable steel unit quads force the low spots in the plate up from the back. Pressures of 60 T. or more are not uncommon. After the proper pressure has been applied, the plate is removed and shaved on the rougher. A second proof of the plate is then taken. If inequalities remain in the printing surface, a second "bump" is applied to the plate, using the interlay if desired, after which the plate is turned over to the plate finisher.

8. The cut-out interlay is placed on top of the sheet cork. The trimmed edges of the interlay are placed in register against the guide posts or points.

9. The frisket is closed against the quad-base chase.

10. The electrotype, face up, is then laid upon the top of the quads, the trimmed edges bearing against the register points of the chase which are in line with those of the frisket.

11. The face of the electrotype is covered with the polished steel plate.

12. The quad chase is then moved under the platen of the lead-molding press and pressure is applied. The movable units force the low spots in the plate up from the back. The pressure varies with the size and the character of the form, but pressures or "bumps" of 60 T. or more are not uncommon.

13. After the first bump, the plate is removed and shaved on the rougher.

14. If a subsequent proof shows inequalities remaining, a second bump is given, using the interlay or cut-out sheet if desired, and the plate is turned over to the finisher for final inspection.

15. In extreme cases, a third bump may be required before the plate is given a smooth shave.

After these operations the plate will be of uniform thickness and will be solidified in the solids to withstand long wear on the presses.

It is claimed that no makeready is necessary on 50% of the plates, and a saving of 50% to 90% of makeready time may be effected where the Hengst system is operated by a skilled operator.

The Hengst multi-unit base system may be employed for correcting flat-bed or rotary press plates. It may be used also to level process as well as black-and-white plates.

New Buildings for G. P. O.

The Government Printing Office has been in need of relief from overcrowded conditions and inefficient operation for a long time. Public Printer A. E. Giegengack is to be congratulated upon the successful conclusion of his efforts in securing funds for new buildings. On August 12, President Roosevelt approved the Deficiency Appropriation Act, in which is carried an item authorizing the expenditure of $5,885,000 for new buildings for the Government Printing Office, and making immediately available $2,000,000 with which to begin the razing of a group of antiquated structures and the erecting of a new annex building and a warehouse with railroad sidings running into it.

The proposed annex to the main Government Printing Office building will have a frontage of 175 feet by 384 feet, and will be eight stories high with floor space area of about 484,000 square feet laid for straight-line production in the mechanical departments.

The new building will be connected to the present main building by bridges. A large part of the new building will be air-conditioned in order to afford the very best working conditions and to improve the product by keeping approximately uniform humidity throughout the year. In planning this building, the architects are striving to avoid the breaking up of working spaces by elevator shafts, stairways and similar obstructions.

The proposed warehouse with railroad trackage running into it, such as Colonel Giegengack has in mind, will be connected with the Government Printing Office main buildings by an underground tunnel. The building of the warehouse will save the Government many thousands of dollars annually in the cost of trucking paper and other printing supplies and by avoiding damage to stock caused by double handling.

HSP Shows Profit

It is shown in the annual report of the Harris-Seybold-Potter Company for the fiscal year ended June 30, that the consolidated net profit for the year after interest on funded debt, depreciation on plant and equipment and after provision for Federal Income Tax amounted to $412,038.68. This compares with a net loss for 1933 of $598,505.95 and a net loss of $153,000.10 in 1934.

Chairman A. F. Harris, Chairman of the Board, states that every economy consistent with efficient operation is being continued.

Net billings for the year were 60% higher than for the previous year while unfilled orders on June 30 were 15% higher than at the same time in 1934.

Substantial improvement in the financial position of the company is shown in the report. Funded debt was reduced $91,000. Cash expenditures for plant and equipment amounted to $84,795.15. These were effected without impairment of working capital, Mr. Harris pointed out, it having been increased $220,518.45 during the current year.

New Equipment For Modern Plant

New Rotary Flat Shaving Unit

Premier Manufacturing & Sales Company now announces the development of the Premier Rotary Shaver for shaving flat stereotypes, electrotypes and wood or stereotype base. The shaving unit will plane a single cut from 2 in. by 2 in. up to and including 17¾ by 24 in., or as many printing cuts as the bed will accommodate, in any thickness from 0.040 in. up to and including type-high, within a tolerance of 0.001 in.

The principle of milling stereotypes, electrotypes and wood or stereotype base is introduced to the printing industry in this new machine which is provided with a rotary cutter of special design. The cutter actually does the work of removing excess stock from the cuts or bases.

The new Premier Rotary Shaving Unit which introduces the principle of a rotary cutter to mill or plane stereotypes, electrotypes and wood or stereotype base.

In operation, a dial wheel is turned to set the rotary cutter for the desired height of base and a dial pointer indicates the proper cutter setting. An operating lever is pulled to start the machine which will complete its work in 30 seconds.

The new Premier Rotary Shaver is of unit-type fabrication. Heavy construction throughout and anti-friction bearings are employed for rigidity and to insure smooth cutting. The special bed feed is designed for rapid bed return.

The machine is provided with a vacuum type chip remover which deposits the chips in a cyclone chip receptacle, leaving the bed free of chips at all times. An automatic stop device prevents operation if the bed is over-raised. All drives are enclosed with heavy cast iron guards. All working parts are accessible. It is claimed products are shaved or milled to exact dial settings with vanishingly small errors in thickness.

Further information may be obtained by addressing The Stahi Newspaper Supply Company direct or in care of *Printing* Equipment *Engineer.*

Three-Quarter Split Magazine

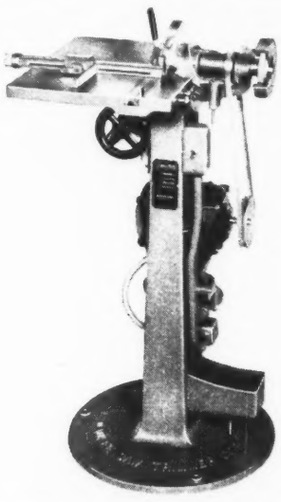
A new split magazine carrying sixteen matrices to the channel has been announced by Intertype Corporation. It is referred to as a three-quarter magazine, although its actual maximum capacity is four-fifths that of a standard full-length magazine, being designed for fonts of 1200 matrices, or less, as compared with full fonts of 1500 matrices carried by a full-length magazine with twenty matrices to the channel.

The three-quarter Intertype split magazine is being made of a light-weight material, in fact so light that this new extra-capacity split magazine will weigh less than a regular split magazine made of brass. It is stated by the manufacturers that the new magazine can be used on all models of Intertypes, new or outstanding.

For setting large display matrices, the regular half-size split magazine contains sufficient characters for all ordinary purposes. For handling the smaller sizes, however, its capacity is often found to be too small for fast composition. In such cases the new three-quarter Intertype magazine will meet a long-felt need.

Saw Efficiency Increased

The Milwaukee Saw Trimmer Corporation announces several improvements on the C & G Saw-Trimmer. The size of the base has been increased to provide steadiness during the sawing and mitering operations. Other features are: V-belt drive; spindle lock with spanner wrench for easy removal of saw blades and head from spindle; adjustments on gauges to take up end play in gauge screws; completely enclosed wiring with convenient outlet boxes for easy installation.



View of newly improved C & G Saw-Trimmer

Complete information may be obtained by writing the Company direct or in care of *Printing* Equipment *Engineer.*

ATF New Orleans Dealer

E. C. Palmer & Co., Ltd., of New Orleans (La.) and with branches in Dallas and Houston (Tex.) and Tampa (Fla.) has just been appointed exclusive dealers for American Type Founders in that territory. Palmer will handle the complete ATF line.

Improved Ludlow Rheostat

An improved rheostat for Ludlow casting machines with electrically-heated crucibles is announced by the Ludlow Typograph Company. The improved rheostat is mounted on a special rheostat bracket, which in turn is mounted to the back of the machine by using the same screw holes used to mount the old-style rheostat bracket. As installed, the top of the rheostat is on a plane with the table top of the machine and has a slope corresponding to the slope of the table top. It is finished in the same color as the Ludlow machine.

View of Improved Rheostat attached to the table top of a Ludlow Casting Machine.

In addition to improving the appearance of the machine, the current capacity of the improved rheostat is far above the heaviest normal demands of the throat and mouth heaters. Its construction is such that a burned-out resistor does not necessarily mean shutting down the machine as a broken resistor can generally be repaired by soldering a bridge wire across the burned-out section and advancing the dial setting oue point. All parts of the rheostat are easily accessible and should a resistor be burned out it can be easily replaced.

This improved rheostat, for standard voltages, is equipped with four individual resistors, mounted below the regulating switch contact plate. These resistors are wound on a flat core, and the vertical mounting of the resistors allows maximum dissipation of heat. The taps of the resistors lead to the respective contacts through short-lead wires, isolating the switch contacts from direct contact with the heat generated in the resistors. The switch contacts are made of special alloy metal to resist oxidation, and because these contacts are isolated from the direct heat of the resistors the life of the rheostat is greatly increased.

Vandercook Proof Presses

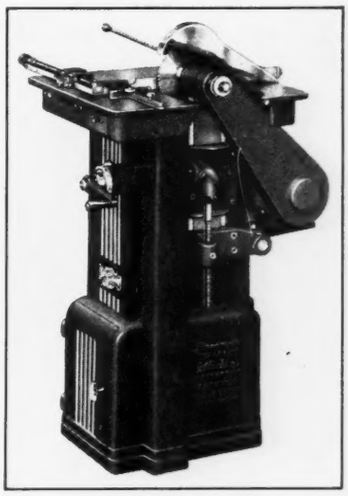
Vandercook Rigid Bed Proof Presses and Test Presses are now in use in a great many of the major plants printing in the English language. These presses are now built in twenty-one different sizes and models to meet the requirements of printers, publishers, typographers, photoengravers, electrotypers, inkmakers and papermakers.

Makeready on Vandercook Proof Presses is largely eliminated. These presses, it is claimed, will print a single unsupported letter or a form the full size of the press without making changes in the adjustments of the press or tympan. Worn type and imperfect plates can be detected on the first proof and necessary changes made at infinitely less cost than after the form is locked up on the producing press.

New Glider TrimOsaw

The Hammond Machinery Builders, Inc., announce the introduction of a new saw-trimmer, styled the Hammond Glider TrimOsaw. A feature of the saw-trimmer is the gliding ball-bearing table. It is claimed that only a light touch of the finger tips is required to propel the table through the heaviest cuts of solid type-high metal casts.

The complete saw-head assembly, including motor, is raised and lowered by a newly-designed micrometer-gauged, crank-controlled mechanism which provides for quick, accurate adjustment of the saw at any desired point in relation to the table height. The basic principle of combining saw-blade and trimmer-knives, so that sawing and trimming is done simultaneously in one operation, is retained. This unit incorporates a ball-bearing saw arbor and a new method of driving the saw. Saw and trimmer-knife changes are effected quickly. Saws and trimmer-knives are made from special alloy steel. The saw is operated by a double V-belt drive from motor to saw arbor.



In addition to a ball bearing table, this new saw-trimmer has been given a modernistic base.

A new type "kwick-set" micrometer point measure gauge greatly facilitates accurate gauging of materials. The pica graduations are plainly etched in white on a black hard metal scale extending full length of gauge. The new "firm-grip" workholder clamp provides unyielding clamping pressure. The clamp is quick-acting and easily manipulated.

The new base is modernistic in design. Dust-proof door at bottom provides convenient egress for a rubber-tired, wheel-mounted waste receptacle, contributing to cleanliness and neatness. All bright parts are chrome-plated to insure against rust discoloration.

Illustrated descriptive matter may be obtained by addressing the Hammond Machinery Builders, Inc., direct or in care of *Printing* EQUIPMENT *Engineer.*

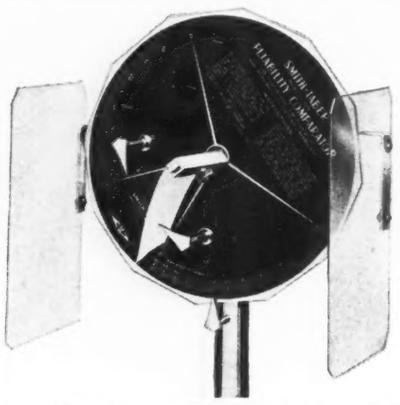
Recent Rouse Miterer Sales

Rouse Vertical Rotary Mitering Machines have been installed recently in the following printing and publishing plants: Tribune Publishing Co., Oakland, Calif.; H. O. Bullard, New York, N. Y.; Dickey County Leader, Ellendale, N. D.; The Pittsburgh Press; Sharon (Pa.) Herald Pub. Co.; The Milwaukee Journal Company (2 machines); Syracuse (N. Y.) Newspapers, Inc.; Press-Democrat Pub. Co., Santa Rosa, Calif.; Queens Typographic Service, Brooklyn, N. Y.

Pliability Comparator

The development of a Pliability Comparator providing a quick and accurate means of checking and controlling quantitative and qualitative factors relating to pliability of textiles, thin papers, transparent wrappings, suede leather, and other light materials is announced by the Smith-Taber Co., scientific instrument manufacturers.

Included in its important uses are: Checking flexibility of thin papers such as bonds, tissue, onion skins, towling etc., textiles, transparent traceings, soft leathers and



Top Sectional View of Smith-Taber Pliability Comparator

imitation leathers; determination of the effect of various weaves and twists affecting pliability of fabrics, effects of Sanforizing and other shrinking processes on pliability of material, determining the most suitable thickness of transparent wrapping material for various sizes and shapes of packages wrapped by hand or automatic packaging machines.

The instrument is built to precision standards of accuracy and has no delicate parts to wear or lose adjustment during years of laboratory or shop use. It is quick and easy to operate and gives a check both with and against grain or warp and fill of material being tested. Construction, operation and uses are described in an illustrated brochure No. 535, published by the Smith-Taber Co.

New Special Reflectors

It is said that General Electric's new High Intensity Mercury Vapor Lamp practically doubles the lighting intensity of incandescent lighting by providing as much light with a 400-watt bulb as incandescent lighting does with a 750-watt bulb, without rewiring, other than the addition of a special reactor for use on 208-240 volt lines, or a special transformer for 105-120 volt lines.

The Miller Company, Metal Craftsmen, now announce specially designed reflector equipment for mercury vapor

Combination High Intensity Mercury Vapor and Mazda Lamp Reflector which has just been announced by the Miller Company

lighting. These include styles and types for any kind of mounting, as well as for color correction of mercury vapor illumination individually or in combination.

Continued on Page 43

Electra—New Book and Advertising Face

In a booklet entitled *Emblems and Electra*, published by the Mergenthaler Linotype Company, W. A. Dwiggins, designer of the emblems and the new type face, tells an interesting story about the designing of Electra. The emblems are accompanied by quatrains written by William Rose Benet.

Electra falls within the modern family of type styles. The design, however, is not based on any traditional model. Electra provides a new type texture for book page composition. In the larger sizes now in preparation it will furnish the printer with a new note in advertising typography.

ABCDEFGHIJKLMNOPQ
RSTUVWXYZ&ÆŒE
ABCDEFGHIJKLMNOPQRSTUVW
XYZ&ÆŒE
abcdefghijklmnopqrstuvwxyz
æœ1234567890

ABCDEFGHIJKLMNOPQ
RSTUVWXYZ&ÆŒE
abcdefghijklmnopqrstuvwxyz
æœ1234567890

These are 12-point character showings of Electra, the new type face designed for the Mergenthaler Linotype Company by W. A. Dwiggins.

The booklet was set throughout in the 12-point size of Electra in combination with Italic and Small Caps. The 10, 14 and 16-point sizes, in the same combination, are in process of manufacture. Mr. Dwiggins is busy, meanwhile, with drawings for the display sizes. Though the edition of the booklet is not large, the Mergenthaler Linotype Co. will be pleased to send a copy to each reader of *Printing* EQUIPMENT *Engineer* as long as the supply lasts.

Control Valve for Burner

A new valve having a lever and dial arrangement for controlling the flow of gas to the metal pot mouthpiece burner has been announced by Intertype Corporation. The control lever and dial are placed in a position near

View of Intertype's new Metal Pot Mouthpiece Burner Control Valve.

the mouthpiece where the large figures on the dial can be read at a glance. The operator adjusts the valve as may be necessary when changing from small to large slugs, or vice versa, or whenever a change in temperature at the mouthpiece is desirable.

NOW!

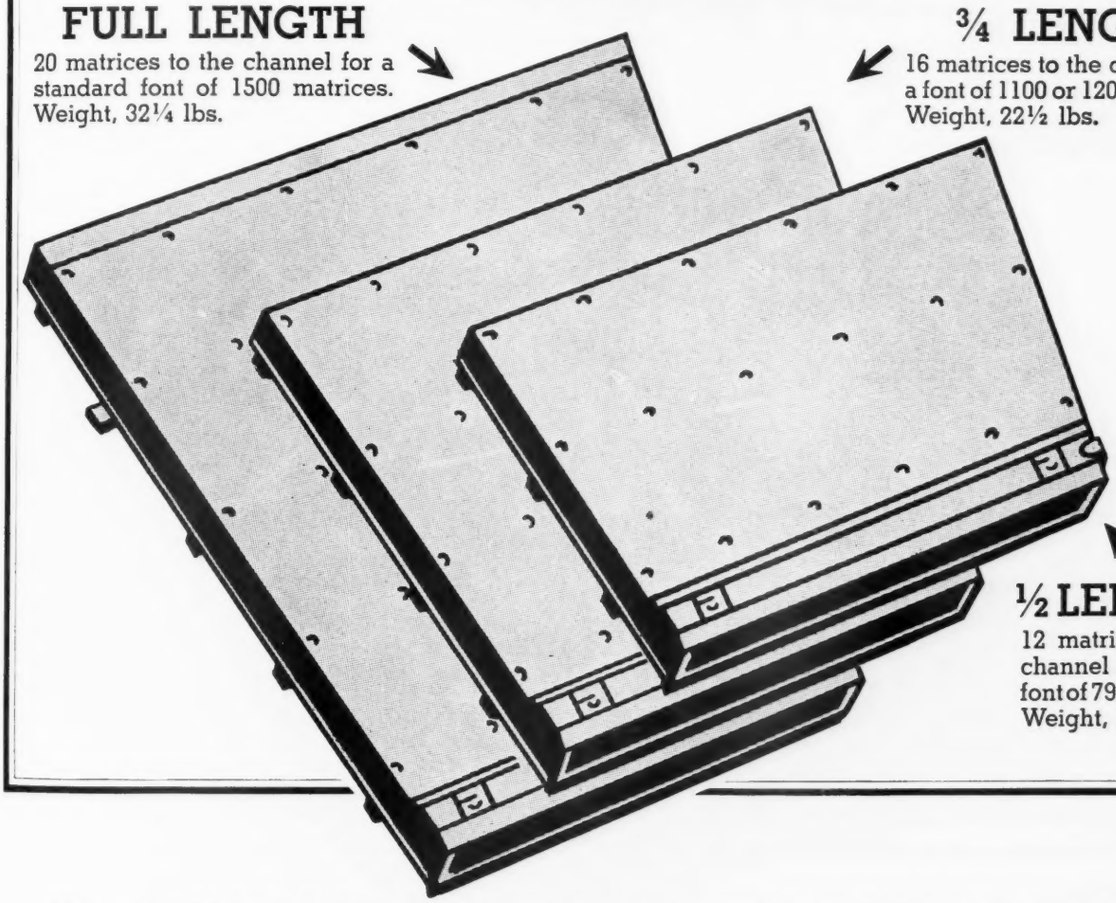
Linotype Magazines in 3 Lengths

for greater convenience and economy

TRADE LINOTYPE MARK

FULL LENGTH
20 matrices to the channel for a standard font of 1500 matrices. Weight, 32¼ lbs.

¾ LENGTH
16 matrices to the channel for a font of 1100 or 1200 matrices. Weight, 22½ lbs.



½ LENGTH
12 matrices to the channel for a split font of 790 matrices. Weight, 18¼ lbs.

The new ¾ length Linotype magazine has been developed to meet the many situations in which a font of 1100 or 1200 matrices is sufficient. It is light and easy to handle. It is made of Linolite and the price is the same as the ½ length magazine. Magazines of all three lengths can be used interchangeably on the same Linotype. The only machine change that is needed is slotting the magazine frames. New frames with the proper slots will be exchanged for old frames at a nominal charge. Write our nearest agency or our representative for further information.

MERGENTHALER LINOTYPE COMPANY, BROOKLYN, N. Y.

SAN FRANCISCO · CHICAGO · NEW ORLEANS · CANADIAN LINOTYPE, LIMITED, TORONTO, CANADA

Representatives in the Principal Cities of the World

ANNOUNCING THE NEW

SIMPLIFIED FAST-STEPPING SHAVING UNIT FOR

A Swift Turn of the **Dial Wheel** to the exact thickness desired, pull the operating lever and **The Premier** in **30 Seconds** delivers to you cuts shaved within a **Tolerance** of .001"—ready for your forms. From a single cut 2" x 2" to one 17¾" x 24" or as many cuts as bed will take, in any thickness from .040" to **Type High, The Premier** delivers cuts in exact thickness of **Dial Settings.**

SALES

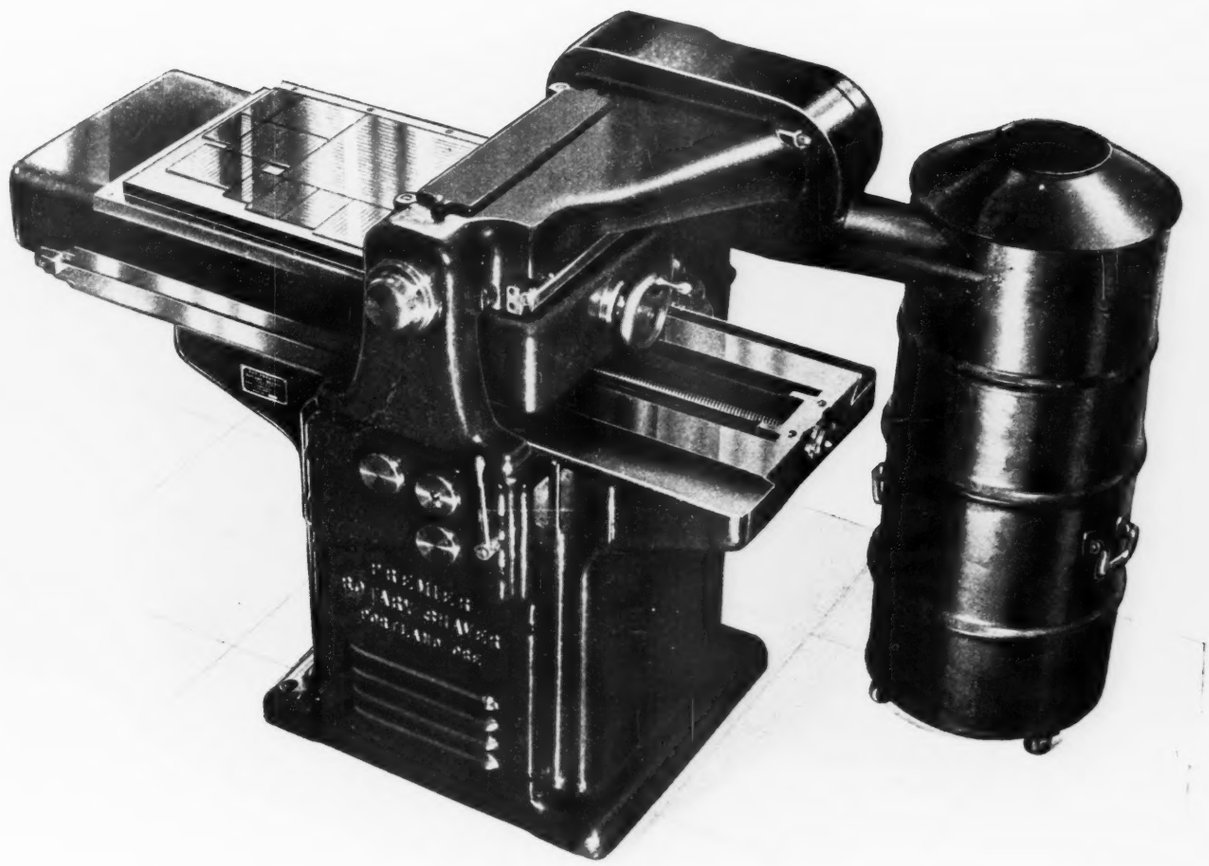
STAHI NEWSPAPER

1020 CROCKER STREET

LOS ANGELES, CALIFORNIA

PREMIER ROTARY SHAVER

SHAVING ELECTROTYPES, STEREOTYPES AND WOOD



Revolutionary in **Principle—Marvelous** in **Performance—The Newest** and **Smartest** of all **Flat Shaving Machines.** It sets a **New Pace** in shaving flat work with precise thickness. From .001" to .080" in one cut, establishes the **Sturdiness** of **The Premier,** providing an **Entirely New Degree** of **Performance** and **Operating Economy. Trouble Free Operation, Automatic Stops** preventing **Over-Setting Bed.**

AGENTS

SUPPLY COMPANY, Inc.

418 OREGONIAN BUILDING

PORTLAND, OREGON

AFRICAN BLACK

Printers who standardize on African Black save money, and eliminate pressroom difficulties.

African Black is adaptable to a wide range of paper stock as it is manufactured in three consistencies.

Heavy Body African—medium drying for Antique, Old Style and similar papers, on which a heavy bodied ink is required to obtain sharp printing.

Medium Body—quick drying African, for the better grades of machine finish, super, plate and similar book papers. An excellent publication black.

Soft Body African—a good drying ink for paper stocks requiring a soft book black. Very useful in cold pressrooms.

Each African Black is made with the same amount of toner and is equal in color value. Clean working on halftones.

The three Africans form an ideal combination for plants in which a variety of book papers are used.

Standardize on African Black

GEO. H. MORRILL COMPANY

Division

General Printing Ink Corporation, 100 Sixth Avenue, New York City, N. Y.

Factories—Norwood, Mass. - Tacony, Philadelphia, Pa. - Chicago, Ill. - San Francisco, Calif.

Branches—Boston - New York - Philadelphia - Chicago - Detroit - St. Louis - Ft. Worth Minneapolis - San Francisco - Los Angeles - Seattle

Beautiful New Building For

Los Angeles Times

This is said to be the first completely air conditioned newspaper plant in the United States. The building has been constructed for protection against earthquake tremors.

By James E. McIntyre*

THE new $4,000,000 marble and limestone home of the Los Angeles *Times* is said to be the first newspaper plant in America to be completely air conditioned. It is also constructed to provide against earthquake contingencies. The plant is fabricated to have the appearance of one building, but really is composed of two separate structures, divided by a 6-in. earthquake joint. In addition to minimizing any strains caused by earth tremors this space prevents transmission of newspaper press vibrations to adjacent parts of the building. The *Times-Mirror* Printing and Binding Plant building immediately adjacent which was constructed several years ago, is separated from the new main plant by a similar joint.

Air Conditioning System

The entire building is equipped with mechanical ventilation and air conditioning by Carrier Engineering Corporation. This provides a uniform temperature inside the structure of 75 deg. with 55% relative humidity the year 'round, all under automatic control. Sound-proofing was made possible by the installation of air-conditioning equipment. Tandem windows, with 6-in. dead air space between the panes admit light but insulate the building interior against street noises. Sound-proof wall and ceiling treatment prevents the transmission of noises of any kind from one department to another. All air used in the building is drawn from outdoors through water sprays where all dirt and dust is removed and the proper amount of moisture is added. These sprays are located in copper spray chambers and are supplied with water by direct centrifugal pumps. There are nine of these air washing chambers, using a total of 1,710 gallons per minute of water, which is a pumping load of 53 horse power.

The system employs full-housed steel fans or blowers to move the air. There are 26 of these units, delivering a total of 372,600 cu. ft. of air per minute, which is sufficient to produce an entire change of air throughout the building once every seven minutes, and requiring 145 motor horse power for operation.

Heating System

The heating of the building is accomplished by steam radiators installed as a part of and operating with the air conditioning system, all under the same automatic control. The heating medium is exhaust steam obtained from the engines which supply the electricity.

In the summer time this exhaust steam is used to operate the steam turbines which furnish power for the refrigerating machines of the air conditioning system. There are three of these machines with a total capacity equal to the melting of 535 tons of ice every day.

Operation at a very low cost is possible by reason of using this exhaust steam in the heating and air conditioning systems and for the building hot water service. This made it an economy to install a steam-driven electric generating plant. Electric current in this plant will cost to manufacture approximately 35% less than to purchase from one of the serving corporations.

Steam for all purposes is generated in a battery of three four-drum water tube boilers. Each boiler has a capacity of 600 horse power, delivering steam at 200 pounds pressure and 150 deg. superheat.

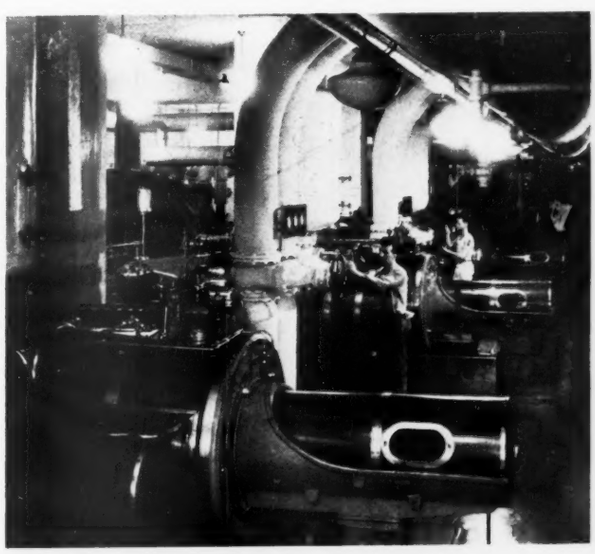
All of the water used in the building is softened, that is, all substances in the water which would cause scale in the pipes are removed in a chemical filtration system, which is in constant operation and which has a capacity of approximately 80,000 gallons of water per day. In addition to this softening process all water used in the hot water system is deaerated to remove the corrosive gases. These two processes will preserve the pipe lines indefinitely and reduce maintenance expense to a minimum.

All water used for supply to the drinking fountains in the building is cooled to a temperature of 45 degrees and circulated at this temperature. This system circulates approximately 520 gallons of water per hour and employs in the cooling process an independent 7-ton refrigerating unit.

Straight-Line Production

Ingenuity of the architect, modern machinery and careful planning of arrangements have combined to give the Los Angeles *Times* a production department in which the continuous flow, or straight-line production idea, has been carried out with practically no compromise.

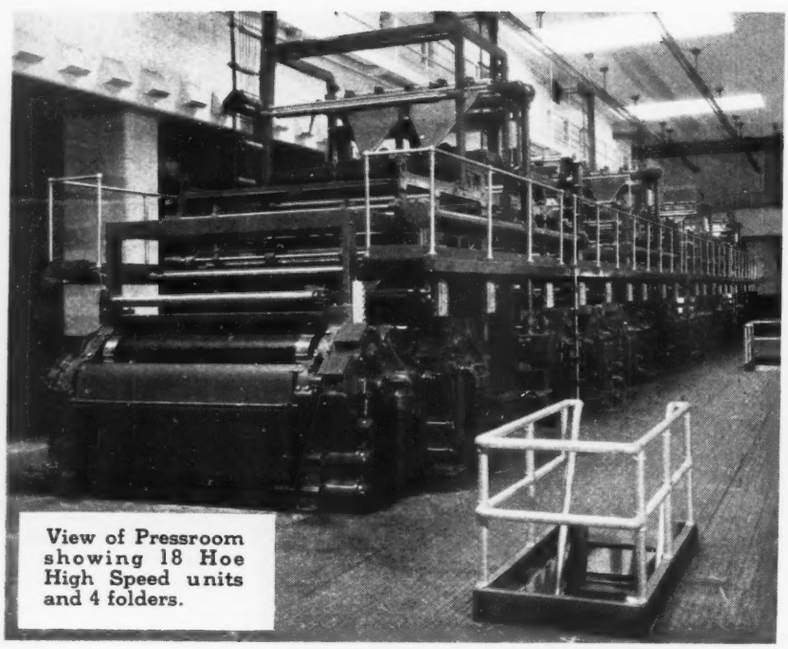
(*Continued on Page 28*)



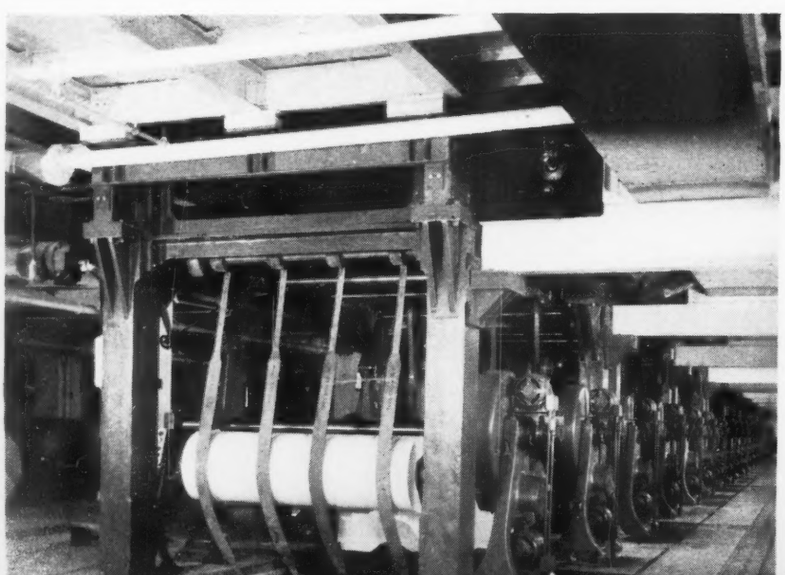
Sub-basement power room in new plant of Los Angeles Times. *Each of the three 500 h.p. Skinner Universal Unaflow Engines drive a directly connected Westinghouse a.c. generator. Steam is the source of power. Natural gas is employed as boiler fuel with oil for standby purposes. Like the other heavy equipment in the building, the power plant units rest on reinforced concrete foundations insulated by lead, cork and floor surface filler of asphaltum for protection against damage by earthquake tremblors.*

*Promotion Manager, the *Times-Mirror* Company, Los Angeles, Calif. With notes compiled by Elliott Lee Ellingwood, Consulting Engineer.

CLINE UNIT TYPE DRIVES . .



View of Pressroom showing 18 Hoe High Speed units and 4 folders.



NEW PRESSES

IN MODERN PLANT
EQUIPPED WITH

CLINE...
Unit Type Drives

• Again the Cline Correlated Control System is chosen for an outstanding installation. Selected by the Los Angeles Times-Mirror after comparison with other types of equipment, Cline efficiency and power economy are again fully confirmed.

The 18 modern units in the new Times-Mirror plant will be more efficient, will be under more positive control because of this logical selection. Cline equipment installed by the Times comprises Cline Unit Type Drive, Cline Quick-Acting Roll Stands (Reels) and Cline Automatic Electric Tensions. This equipment will enable the publisher to receive the full measure of speed and performance that the manufacturer has built into the presses. The Cline System is the natural choice for today's high-speed unit press. It provides direct power application, accurate co-ordinated control of each unit, and fully correlated control of the entire press. All controls are conveniently assembled on one panel. Maximum power economy and utmost flexibility are assured.

It is only logical that publishers everywhere are turning to Cline Correlated Control Systems to obtain the best performance. Write today for detailed information.

Cline Electric Mfg. Co.

MAIN OFFICE, 211 W. WACKER DRIVE,
CHICAGO, ILLINOIS

CLINE — CLINE ELECTRIC MFG. CO. CHICAGO — SYSTEM
QUALITY · NAME · SERVICE · FAME
CLINE WESTINGHOUSE

Western Office
Crocker First Nat'l Bank Bldg.
SAN FRANCISCO, CALIF.

Eastern Office
220 East 42nd Street
NEW YORK CITY

View of reelroom showing 18 Cline Quick-Acting reels and Automatic Electric Tensions. Note clear space around both sides of reels made possible because motor drives for the presses are located close to the ceiling and supported by the press structure.

IN LOS ANGELES TIMES-MIRROR

NAMES MAKE NEWS

Four leading newspapers are installing Cline Unit Type Drives—

LOS ANGELES TIMES-MIRROR—just starting 18 Hoe High Speed units and 4 folders equipped with Cline Unit Type drives, reels and tensions.

CHICAGO TRIBUNE—32 Goss High Speed black units, 8 color units and 7 folders being installed, half of these are now running equipped with Cline Unit Type drives, reels and tensions.

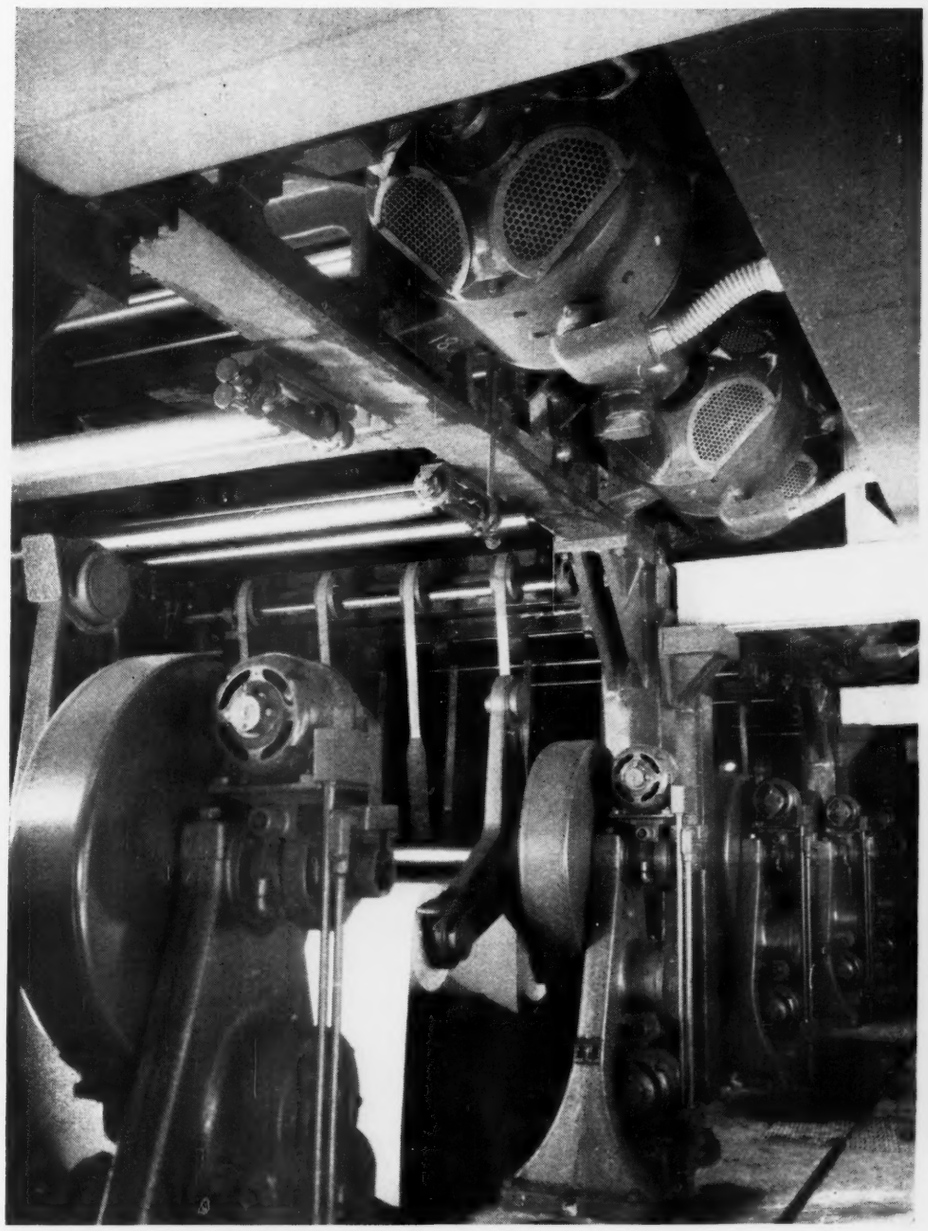
LONDON MAIL—24 Hoe High Speed black units, 8 full color decks, 8 half color decks and 8 folders being equipped with Cline Unit Type drives, manufactured and furnished by J. H. Holmes & Co., Ltd., London, Licensee.

NEW YORK NEWS—Manhattan Plant—8 additional Goss High Speed units and 2 folders being equipped with Cline reels, tensions and pasters.

NEW YORK NEWS—Brooklyn Plant—7 additional units and folder being equipped with Cline reels, tension and paster.

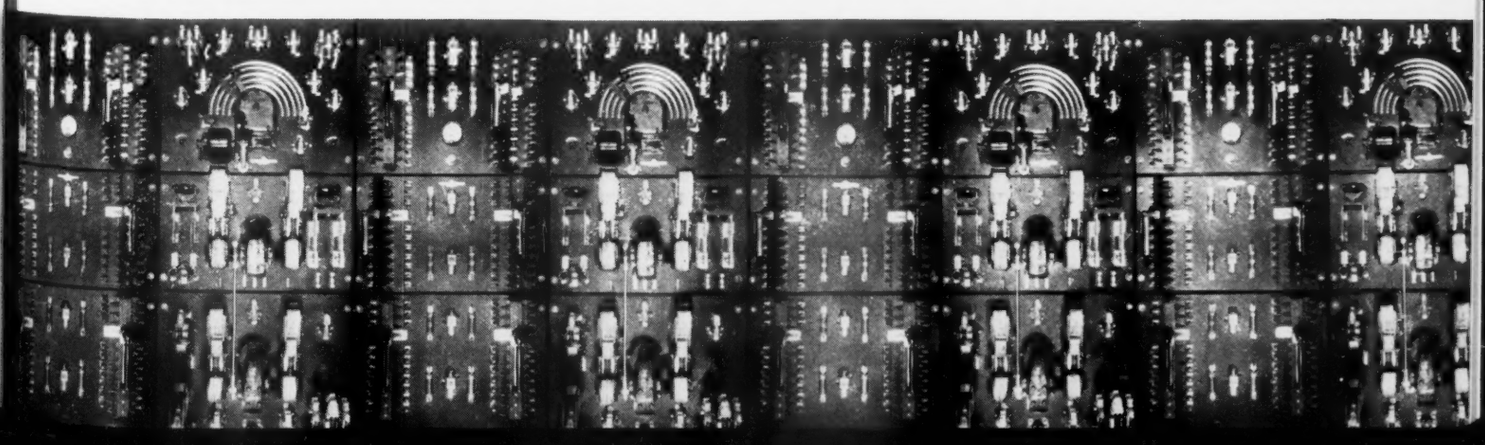
These important installations are conclusive evidence of the reliability, flexibility and efficiency of Cline Unit Type Drives.

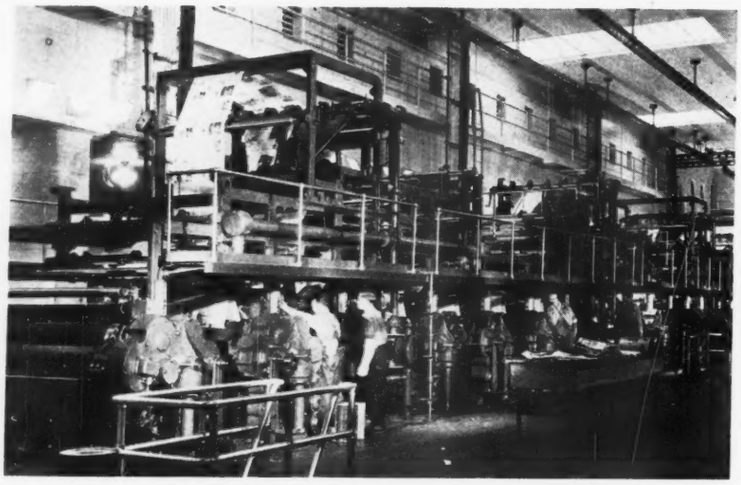
★



● Above is view in reelroom showing power side of reels and, at the top of cut, Cline Unit Type Motors that furnish the power to each press unit above.

CONTROLLERS AND SELECTOR PANELS FOR CLINE UNIT TYPE DRIVES





View of Hoe Super-Production Unit-Type Presses in line in plant of the Los Angeles Times. *The presses are equipped with four high-speed Hoe folders with four airplane formers to permit four section runs. Including the four folders, sixteen of these units have a capacity of 200,000 32-page papers per hour.*

The press foundation is concrete on lead which is insulated from the building caissons and floor by cork and a floor surface strip of asphalt to avoid vibration transmission while the presses are in operation, as well as to prevent tremblor damage. The floor area about the presses is of checkered abrasive non-skid Ferralum steel plate.

It is said the Times *is the first to have unit-type presses with deck reversal gearing adjustment for printing two additional colors and black as an integral part of the units at front and back of each folder. These are said, also, to be the only presses with color ink pumps on the off-side with black ink pumps on the brake side.*

In the event of web tears and to prevent cylinder wraps, Cline-Westinghouse web-break detectors and automatic shears function to stop the press. The detector consists of a switch with a leg extension to which is attached a shoe riding on the paper web between the upper web guides.

In case of a web break, the weight of the shoe pulls the leg to operate the switch. E.M.F. stored in the driving motor armature reacts to start a small motor. The operation of the small motor advances a rod to which is attached a piece of taut wire at a radius of 5 in. The movement of the wire severs the web above the reel and just below the pressroom floor.

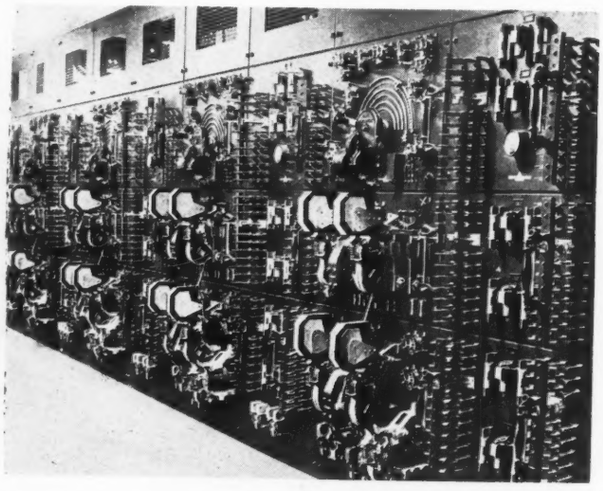
Cline triple reel and tension with reel room automatic control provides for the making of pasters while the presses operate at speeds greater than starting or threading speeds.

All press cylinder gearing is housed to provide continuous operation in oil. Plate and impression cylinders run in roller bearings with Alemite oil through Zerke fittings.

Impression cylinders are adjustable 0.072 in. (0.036 in. from the former rigid position) by means of micrometers on the press frames. Parallel changes of position are made by manipulation of locking handles and worm screws.

World wide and local news copy prepared in the editorial department on the third floor goes by pneumatic tubes to the composing room. Sunday departments and special feature departments have individual pneumatic tubes connecting with the copy cutter's desk in the composing room. Classified advertising copy is sent to the composing room by tubes provided for the purpose.

Display copy originates on the second floor of the building. Including the display copy, any cuts or flat mats are sent to the composing room by the Dispatch Desk.



Switchboard showing Cline Automatic Control System for the eighteen Hoe Black-and-White Printing Press Units in the new plant of the Los Angeles Times. *The drive for the main press is of the unit type, consisting of twenty-two 35 h.p. d.c. motors, each printing and folding unit being provided with its own motor. In order to keep the units operating in synchronism, all of the motors are mechanically connected through a series of clutches to a common driveshaft.*

The wiring for these boards is contained in metal housing with latch doors at the rear. Arranged along a wall are four 5 k.w., 250 v. Westinghouse exciter generators. Suspended from the ceiling are eight Westinghouse resistance armatures for two 40 v. Westinghouse starting generators located along an angle wall.

The Composing Room

The composing room contains 8950 square feet of floor space. The aisles and open areas of the floor are surfaced with vertical section redwood blocks set in English mastic on concrete, surfaced with the same substance. The line-casting machines rest on concrete bases extending from the underlying concrete floor flush with the redwood.

An unusual feature is that the power, heating and case lighting circuits in the composing room are carried in underfloor ducts, permitting relocation of this equipment to allow for expansion.

In general, the lighting in the office spaces is from totally indirect fixtures. In the composing room semi-indirect lighting fixtures are used in order that some shadow may be created to facilitate the reading of type.

In the composing room there are 40 line-casting machines—38 Linotype and 2 Intertype machines with quadding and centering devices. All of these machines are equipped with electric melting pots. Monotype equipment is used in casting the type for setting display ads and for other purposes requiring type not to be had on the Linotypes and Intertypes.

From the time copy leaves the copy cutter's department until the page plates are locked on the press cylinders on the first floor, every operation moves forward in a straight line—pages are made up, matrices are shrunk and heated, and plates cast, trimmed and moved a few feet to the presses. All operations and equipment are on the same floor level and all operations and equipment are conveniently placed to reduce unnecessary motion to a minimum.

Advertising copy, instead of going to the general copy cutter's desk, goes to the advertising foreman's desk, then to the advertising layout man, then to the advertising machines. The saw boy gets it next and sends it to the cases for what hand-set type is needed.

Conveniently near to the two heavy-duty mat-rolling machines advertising matter and news are assembled in page forms. There are some 50 steel make-up tables.

The Stereotype Department

From the two Duplex Tubular mat rollers it is only a few feet to the stereotyping department. Two double Smatco machines pre-heat and shrink the mats one-half inch. Mats are then sent to one of two Stahl mat formers, on the way to a battery of four Junior Autoplate plate-casting machines. These Junior Autoplate machines are fed from two 8-ton, electrically-heated metal pots and have a capacity for casting 12 page plates per minute. Two hundred and ten kilowatts are used for heating the pots, current is a.c., 220 v.

Two autoplate shavers are situated between the plate-making machines and the 18 unit-in-line super-production Hoe printing press.

Adjoining both the composing and stereotype room is a flat casting stereotype room with casting box equipment.

Concrete bases support the machines in the stereotype department. The balance of the floor is surfaced with Wright Jennison yellow vertical section blue blocks laid in lapped sections.

The Monotype machines are contained within a special room. In both the stereotype and monotype rooms, special air conditioning apparatus is provided to carry away fumes and maintain an even temperature with perfect ventilation.

Remelting Equipment

All of the type metal will be melted by electric heat. Each of the two main stereotype pots has a capacity of 8 tons and is equipped with heaters rated at 210 k.w., giving a casting rate of four plates per minute from each pot. The remelting pot used for flat plate casting and remelting of the linotype metal is equipped with 30 k.w. of heaters, melting 1,000 pounds of metal per hour. Each of the 40 linotypes and four monotypes has electrically heated metal pots.

(*Continued on Page* 30)

FOR BETTER *and* MORE ECONOMICAL PRINTING

Anti-frictionized press equipment has brought new economies to the printing industry. With Timken Bearings on plate and impression cylinder shafts modern presses are capable of turning out better work at higher speeds.

Relieved from the drag of friction, cylinders operate faster and smoother. Shaft wear is practically eliminated. Correct and constant alignment of the cylinders is assured. Cylinder jumping is prevented. These vital advantages are combined with a very noticeable reduction in power demand.

Because press buyers realize and appreciate the benefits of anti-frictionization, your equipment will have another strong sales point when it is Timken Bearing Equipped.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *TAPERED ROLLER* BEARINGS

Pages from a Stereotyper's Notebook

FRIDAY 23 AUGUST

It's great to see the increase in advertising we are carrying but it is just showing up our mat weakness all the more. We are delayed on account of makeovers and then we don't get better casts just hopped to think today - the World Series will soon be here. That will be a tough week - holding back every day until the end of the game and then - RUSH. I've got to find the answer before O.T. An alibi won't go.

SATURDAY 24 AUGUST

The Wood Service man dropped in today and found me in all kinds of trouble - just the way I've been much of the time lately. I wasn't in a mood to listen to his line but I did agree to give Wood Dry Mats a fair trial when he offered to send some free. I'll try anything if we can show an improvement before the World Series.

SATURDAY 31 AUGUST

I thought I knew but I didn't until I tried out those Wood Dry Mats. Why we ran through the day so smoothly I was walking on air. Wood Dry Mats are certainly right for us and that Service man knew how to give us what we needed. The Boss said "O.K." when I told him I wanted to run on Wood Mats from now on. Now for the World Series.

WOOD DRY MATS ALWAYS UNIFORM

WOOD
FLONG CORPORATION
HOOSICK FALLS, N.Y

Los Angeles Times

(*Continued from Page 28*)

Wall and Ceiling Treatment

Pressroom walls and ceiling, and the walls and the ceiling of the composing room have been treated with Acoustical plaster and Celotex for absorbing mechanical noises and to prevent the noises being communicated to office rooms and departments on the main floor where creative work is under way.

The Press Room

The lighting in the press rooms is all indirect from light boxes and coves in the walls. This provides an excellent working light, without glare, diffused into the interior of the intricate press structure.

The black-and-white pressroom is 185 feet long by 40 feet wide. Here will be found a Hoe Super-Production Press with 18 units-in-line and four folding units. It is geared for 52,000 papers per hour.

Black-and-White Presses

The black-and-white press has the Cline unit-type drive with a 35 h.p. motor for each unit of the press and each folder with clutches so that each motor can furnish its power direct to the main press drive.

View of section of wash room off mailing department in new plant of the Los Angeles Times.

In order to keep the units operating in synchronism, all of the motors are mechanically connected through a series of clutches to a common drive shaft. Two colors and black may be used on the black-and-white press.

Scott Color Press

A Scott 24-couple unit type high-speed color press is used for printing regular color sections. It is capable of turning out 36,000 papers an hour. There are 24 cylinders, each accommodating 8 plates so that 192 plates may be used at one time. The color press is used, at present, for producing a weekly 16-page comic section in four colors and a 32-page tabloid size illustrated Sunday Magazine in color.

Press Control Equipment

Press control panels are located on the second floor overlooking the pressroom. In the same room besides the black-and-white press control is located the G. E. control equipment for the Scott color press, which is driven by two 150 h.p. variable speed alternating current motors.

The various press combinations from sextuple, octuple and on up to double sextuple with color are obtained by manipulation of the clutches and by operation of transfer switches on the press control panel. This panel is located in the press control room at one end of the pressroom and overlooking the presses through glass windows. Here all of the press wiring is terminated and all of the control apparatus for the press drive is located, including the control switchboards, four 5 k.w. motor generators for speed control and two 15 k.w. motor generators for the low voltage starting current.

The Cline equipment uses two 40-volt generators to supply starting current for the main motor field and four small generator sets of 25 volts for starting the four folding units of the black-and-white press.

Cutler-Hammer Conveyors

Newspapers are delivered in a continuous stream to the mail room on the second floor by means of four Cutler-Hammer conveyors. These have twin break electric starters and chain drive from the folders. Each carries up to 50,000 papers per hour from the pressroom to the mailing room on the second floor.

The Mail Room

The mail room is directly over the street-level indoor loading concourse which presents an unobstructed area approximately 60 ft. by 160 ft. Chutes connect the loading platform in the delivery concourse and the bundling tables in the mail room, making it possible to receive papers from the conveyors, tie them and then drop them directly into the delivery trucks with a minimum of time and effort.

Paper Storage

Incoming raw paper is stored in the basement of the plant which is on the reel room level and which has 39,000 sq. ft. of storage space. This paper storage basement has special air conditioning apparatus which provides correct humidity for storage of paper. A six-weeks' paper supply can be stored for both black-and-white and the color presses, keeping it on hand in order that it may have the benefit of air conditioning to reduce web breaks.

Paper is received in the general loading concourse on trucks. It is then put on an automatic conveyor which lowers it to the paper storage basement where there are small paper trucks and a track system extending throughout the paper storage area. Turntable switches enable the operator to deposit rolls of paper in any part of the storage room. Special elevated paper carriers permit the piling of roll on roll without need for heavy lifting.

Hammond Appointments

The Hammond Machinery Builders, Inc., Kalamazoo, Mich., announce the appointment of W. J. Holtmeier, Eastern Sales Manager, with headquarters in the metropolitan section of New York.

A. T. VanderLinde has been transferred to the Northern, Ohio, Northern Indiana, and Michigan territory.

Other sales appointments are as follows: Lee C. Hammond, metropolitan districts Chicago and Milwaukee, headquarters Chicago; H. C. Johnson, Illinois, Wisconsin, Iowa and Minnesota; J. D. McHugh, Southern Ohio, West Virginia, Southern Indiana and Kentucky; T. A. Hession, Virginia, Carolinas, Tennessee and North Georgia; J. S. Wollett, Pennsylvania; George Hummel, Northern New York State; W. F. Boyer, Southern California.

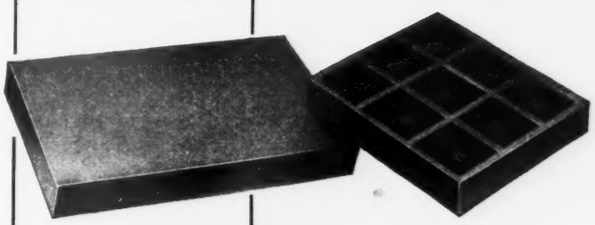
Introducing Ralph Robuck

Ralph Robuck, Intertype representative, has been transferred from Iowa to northern Ohio, now sharing the Buckeye territory with F. W. ("Spot") Northmore. Before going with Intertype, he accumulated experience with various Western print shops. He has sold Intertypes for the past ten years and has been cited frequently by his company for negotiating some of its most important sales. He will live in Cleveland.

Ralph Robuck, New Intertype Representative in Northern Ohio

The word is "SPEED"

NO LOST MINUTES



When you use

Challenge "Sta-Rite"

NEWSPAPER BASES

★ Cut time and labor costs . . . speed up the handling of unmounted electros, half-tones and zincs for stereotyping. Simply put Challenge Newspaper Bases in the form — lay the plates on top — and you're ready to "put the paper to bed." No hooks — no catches necessary to hold plates in place.

"Sta-Rite" Bases are made from fine-grained steel alloy castings with utmost precision. They come in solid or cored bases — will not dent or bruise — and withstand tight locking and intense heat. They are accurate, rigid — will not "give" or sag under pressure — non-shrinkable, and are a permanent addition to the equipment of any shop.

Inquire into the advantages of these bases and send for prices and sizes at once. Also investigate the Challenge Newspaper Base Cabinet — a time and labor-saver for the make-up man. Write today!

THE CHALLENGE MACHINERY CO.

GRAND HAVEN, MICH.

CHICAGO, 17-19 E. Austin Ave. 200 Hudson St., NEW YORK

PROFILOGRAMS OF TIMKEN BEARING FINISHES
(Magnification—500 Vertical, 30 Horizontal)

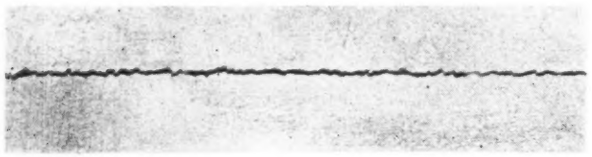


Fig. 1.—Standard Grind Finish for bearings.

Fig. 2.—The new Mirror Finish which is now being given to Timken Bearings as fast as the special equipment required can be built and installed.

Improvement in Timken Bearings

An improvement in surface finish which has been termed "Mirror Finish" is now being applied to Timken Tapered Roller Bearings as rapidly as the special equipment required can be built and installed. The standard finish on Timken Bearings is smooth to the delicate eye and finger nail test, which can hardly determine any irregularities in the finely ground surface, yet this new Mirror Finish is infinitely smoother.

The accompanying illustrations show both standard and Mirror Finish surfaces magnified 500 times in a vertical plane to emphasize even the slightest irregularity. The measurements were made with equipment capable of measuring in terms of a millionth of an inch (0.000001 in.).

To achieve this uniformity of finish on the operating surfaces of Timken Bearings, years of experimental work have been required. First of all, a method of measuring surface finish was required. Then it was possible to gauge the advances in shop practice.

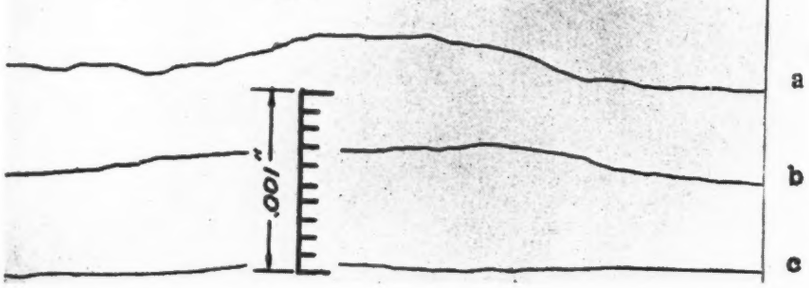


Fig. 3.—Surfaces of Timken Roller Bearings shown in true proportions, showing bluntness of irregularities. Magnification 1000X. (a) Rough hone; (b) One feed mark of diamond bore; (c) Finish hone. Reproduced actual size.

FLEX
DRY MATS

Recently a stereotyper started to throw away his first cast from a FLEX dry mat—simply because he had always done this (on account of chills) with casts from other mats. But when he examined the first cast from his FLEX dry mat he found no sign of a chill and the plate was run—with excellent results. Such experiences are common among new users of FLEX dry mats.

Samples of FLEX dry mats will be sent to any Stereotyper on request.

FEATURES:

1. Low-pressure molding.
2. Quick scorching.
3. Splendid stay-back.
4. Low-temperature casting.
5. Uniform shrinkage.
6. Freedom from buckling.
7. Uniform thickness.
8. Excellent reproduction of halftones.

FLEXIDEAL DRY MAT COMPANY, 21 West Street, New York

Early in 1933, Dr. E. J. Abbott, Research Physicist at the University of Michigan, presented a paper before the Annual Meeting of the S.A.E. in Detroit on "Surface Finish and How It Can Be Measured and Specified," amplifying the work done on the Profilograph, which was announced in 1933. This work was done in connection with Timken Research at the University of Michigan, and the instrument perfected by Dr. Abbott, called the Profilograph, was immediately put to work at the Timken plant.

The Profilograph, now used as a gauge of Mirror Finish surfaces, consists essentially of a fine diamond point which acts as a tracer or detector, moving over the surface of the specimen. To this is connected an optical system which magnifies the movement of the detector. In order to record even the most minute irregularities in the finely ground surfaces, it was necessary to apply a vertical magnification of 2000 times to the system. The trace of the detector point as magnified is photographed as a permanent record.

By comparing Figs. 1 and 2 with Fig. 3, an example of the new finish on Timken Bearings will be noted. Figure 3 shows profilograms of surfaces in true proportions, magnified 1000 times. The upper trace (a), shows a rough hone finish; the middle trace (b), a single feed mark of a diamond bore, and the lower trace (c), illustrates the finish secured by finish honing. It will be seen that the normal irregularities of finished surfaces are essentially blunt.

Printing EQUIPMENT *Engineer* is ready at all times to assist you by supplying the names of equipment and supplies manufacturers.

New Books

THREE MONOGRAPHS ON COLOR

THE ultimate requirement in any piece of matter printed in color is that it must have eye appeal for Mr. Average Buyer. Here the printing plant mechanical executive functions either in interpreting the designer's effects intelligently or in using his own knowledge to create something for the printing customer.

As a rule, however, the ability of the mechanical and production executive to adapt color for printing purposes is due to instinct, color sense or self-training, teh exercise of which does not always fit appropriately into the constantly expanding uses for which the buyer wishes to utilize color. This being the case, we want to ask the printing plant executive: What would you think if some one said that the means for planning and selecting color for printed matter could be transformed from an art to a science—not a difficult nor an abstruse method, but one written and illustrated in reasonably simple form?

"Three Monographs On Color" have been published by the International Printing Ink Corporation. The titles are as follows:

1. Color Chemistry
2. Color As Light
3. Color In Use

As is explained in the publisher's announcement, the language of color is interpreted in different ways by those concerned with its use. "To the artist color is something to produce an effect, to the chemist it is a

. . . ACTUAL experience now more than ever proves the fundamental RIGHTNESS of the LUDLOW hand-set, slug-cast method of producing display composition in full variety of typeface size and style. . . .

LUDLOW TYPOGRAPH COMPANY

2032 CLYBOURN AVENUE + + + CHICAGO, ILLINOIS

INTERESTING EVENT AT THE CINCINNATI CONVENTION OF THE INTERNATIONAL ASSOCIATION OF PRINTING HOUSE CRAFTSMEN

Charles R. Sherman (left) of the International Printing Ink Corporation Research Laboratories presents the first two sets of the newly-published "Three Monographs On Color" to Thos. H. Cordis (center) retiring International President and John B. Curry (right) newly-elected International President.

formula, to the psychologist a sensation, to the physicist the behavior of light, to the printer it is a matching job and to the advertiser it is a sales tool." It is apparent there is a need for a work to bring these varying approaches to a meeting ground so there can be common comprehension in the production of color printed matter. In the light of the increasing new ways of using color, today's printing plant executive should keep himself informed about the latest investigational and research work in color, simply because more is expected of his technical ability.

These Monographs are the result of a research program conducted by Ipi. In addition to the Ipi Research Laboratories Staff, practical scientists and professional men collaborated in planning, writing, editing and design.

Anyone engaged in the Graphic Arts will appreciate the infinite pains taken in producing these books. The text is simply and directly written and one is impressed with the absence of condescending spirit upon the part of the authors. Considerable care has been taken to position the illustrations opposite appropriate text matter for convenient reference. Each book in the set is smartly designed and is printed beautifully.

THREE MONOGRAPHS ON COLOR, 8¾ in. by 11¼ in., bound in board covers, in water-proof paper covered box. Published by International Printing Ink Corporation, 75 Varick St., New York, N. Y. Price, $10.00.

COPIFIT

The complex problems associated with copy-fitting in connection with line-slug products become simple when "Copifit" System is used. It is a complete work on the subject. It would be difficult to explain the many uses of this flexible system in any review. Through its use, mental "gymnastics" are avoided and, the author states, copy may be fitted to well within 3%.

Copifit is published particularly for use with the product of the standard line-casting machines—the Inter-

EDES PHOTO-ENGRAVING

EDES SUPERFINE QUALITY ZINC

ZINC

THE STANDARD FOR MORE THAN 80 YEARS

THE EDES MANUFACTURING CO., PLYMOUTH, MASS.

HOLDS THE FINE LINES

Sales Representatives

John H. Heimbuecher Metals Co., 514 No. Third St., St. Louis, Mo.
Gazzolo Drug & Chemical Co., 119 So. Green St., Chicago, Ill.
E. H. Walker Supply Co., Printcraft Bldg., Washington, D. C.
Selby Mohr, 883 Mission St., San Francisco, Cal.
Thompson-Hayward Chemical Co., 2228 Blake St., Denver, Colo.
Thompson-Hayward Chemical Co., 909-2nd St. So., Minneapolis, Minn.
Metzger Photo Supply Co., 1091 So. Main St., Akron, Ohio
G. C. Dom Supply Co., 125 East Pearl St., Cincinnati, Ohio

type, Linotype, the All-Purpose Linotype and the Ludlow Typograph. It is claimed by the author that the decision to adapt the system to slug composition was reached after examination of data which indicated that approximately 75% of all text and display composition is the product of these machines. The difference between the Intertype and Linotype standard of 0.014 in. to the point and the true foundry or Monotype em which is 0.01383 in. to the point, is fully explained in the introduction to Table III. This table enables the user to determine the number of slug lines which will fit into one inch and each succeeding one inch of depth. The table also shows the number of true picas that will contain the number of lines of the selected body size, or the number of slugs which can be fitted into a given number of true picas.

Included with Copifit are three manuscript character-counting gauges. These are called "Magicounts" and each is made of a transparent tough material. In use, a Magicount is laid on a sheet of manuscript. In one operation, the average number of characters per line is given as well as the number of lines in the manuscript and the total number of characters and spaces on the entire sheet without further calculation.

A remarkably complete tabulation of all the body, text, display and head-letter faces made by Intertype, Linotype and Ludlow is included. The faces are listed and are given a key number in an index. Each face is listed under its family name in point size, font number, figures (setwidth points) in association with its key number. By locating the key number of a particular face and referring to that number in a table it is possible to find the number of type characters and spaces of any type-face of any point-size that will fill a line of any measure without computation.

The contents are as follows:

Table I: Multiplication and Division Table.
Table II: An accurate computation of the number of type characters of any face of type in any measure from three picas to forty-five picas.
Table III: Gives the number of slugs from keyboard machines (as they come from the machines) that will fit into a given number of picas in depth up to 144.
Indention Table: Instructs how to set type to follow any angle.
Layout Chart: Ruled divisions according to keyboard machine standard measurements.
Index "A" Section: Quick reference to the name of any face in either position with its combination of those on two-letter matrices in all type in sizes from 5 pt. to 14 pt., inclusive.
"A" Section: Accurate data concerning all type faces of keyboard machines in sizes 5 pt. to 14 pt., inclusive: Point size, font number, figure widths in points, and key numbers that coincide with key numbers of Table II.
"B" Section: Keyboard machine faces in sizes 16 pt. to 60 pt., inclusive, with data as in "A" Section.
"C" Section: All-Purpose Linotype Faces and Intertype Stick Attachment Faces with data as in "A" Section.
"D" Section: Ludlow Faces with data as in "A" Section.
Individual Office Charts: For specific equipment, individual jobs or work in hand.

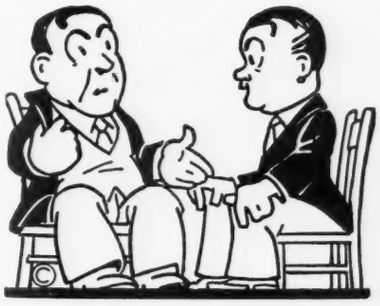
COPIFIT, by *Guy R. Johnstone* with acknowledgement by the author for assistance given by H. L. Wadsworth, W. P. Butler, J. W. Schuh, C. H. Griffith and Douglas C. McMurtrie. Bound in loose leaf blue fabrikoid cover, size 10 in. by 11½ in. Cover stamped in gold. Further information may be obtained by addressing Copifit, Inc., direct at 1651 Cosmo St., Los Angeles, Calif.

THE PRACTICE OF COLLOTYPE

Any technical information of an up-to-date nature about collotyping should be welcome to those who employ the process or those who are considering its employment. Collotype, lichtdruck, or any other name which may be given to the process, has been reserved for fine reproductions of an artistic nature or where a fine arts manufacturer wishes to display facsimile reproductions to good advantage. Its production is limited to 500 or less copies per hour.

Collotype is a photo-mechanical method of printing with ink from the plane surface of a photographic film. It is based upon the principle that a film of gelatine

BURGESS CHROME MATS



Let's Talk It Over

Day by day the advertisers are demanding better production of their expensive copy.

You are not doing justice to them nor to yourself if you are not using the best dry mat.

We can prove, by actual demonstration. that Burgess Chrome Mats will give you better printing plates.

Ask for demonstration.

●

BURGESS CELLULOSE COMPANY
FREEPORT, ILLINOIS

CHROME MATS
A Laboratory Product
A 230

Pacific Coast Representative, RALPH LEBER,
426 Polson Bldg., Seattle, Washington

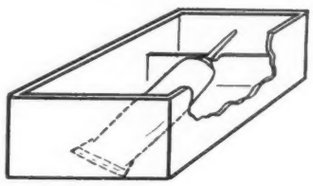
BURGESS CHROME MATS

BURGESS CHROME MATS

BURGESS CHROME MATS

BOOTH'S PRINTERS' ZINK CUT CEMENT

is an extremely economical and rapid means for fastening cuts of all kinds to wood or metal base. The cement is supplied in tube form with long applicator nozzle to which is screwed a detachable cap. However, if the cement must be used frequently, the nozzle



cap may be laid aside and an ordinary cigar box can be used as a holder for the tube. A notched wooden strip, 1 in. high and spaced 1 in. from one end of the box provides a convenient nozzle support, as shown in the diagram. A sheet of paper laid over the support can be changed as needed.

BOOTH'S Green Keyboard RUBBER ROLLS

If keyboard cams on composing machines are kept in reasonably good condition, Booth's Green Keyboard Rubber Rolls may be depended upon to function accurately. Booth's Rolls provide a resilient and persuasive tread to insure each cam turning properly when it contacts the roll. Booth's Rolls are made by specialists who are interested in providing you with a dependable product for a particular purpose.

Corrugated or Plain—as You Choose

$1.30 per pair; $7.00 per dozen; 55 cents each in lots of 100.

50c per large tube; $5.00 per dozen tubes; $4.00 per dozen tubes in gross lots.

Booth's Concentrated Engraver's Rubber Cement

When mixed six-to-one with benzol, 35 gallons of finest quality cement is obtained. $7.50 per five-gallon can, ready for mixing.

The E. A. Booth Rubber Co.
364 Rockefeller Bldg. Cleveland, Ohio

impregnated with a bichromate, after being acted upon by light and dampening will receive greasy ink only on those parts of the film which have been affected by light.

In a new 96-page book, Thomas A. Wilson describes the process fully and gives instructions for making equipment necessary to plate production. Formulas for graining zinc and aluminum plates, substratum, sensitizer and other solutions with instruction for plate-making manipulation and presswork are given. A chapter on the technique peculiar to collotype in color seems to be quite complete. A 7-page glossary used in conjunction with collotyping is a valuable feature. Limitations of collotype as well as its appropriate uses are fully and frankly explained.

THE PROCESS OF COLLOTYPE, by *Thomas A. Wilson*, 5½ in. by 8 in., red cloth, 96 pages. Published by American Photographic Pub. Co., Boston, Mass. Price, $2.00.

LSP YEAR BOOK

The English printer is as enthusiastic about his profession as he is practical. Perpetuation of the reproductive processes, with progressive improvement in the technique, is assured in the rising generation of English Craftsmen. This conclusion is inevitable after one has looked over the posters, booklets and the 1935 Year Book of the London School of Printing. Printing instruction in England seems to be conducted under a controlled and highly organized system.

Examples of all kinds of hand and machine composition and presswork by letterpress and offset-lith are included. One section consists of "A Selection of Advertisements" by the senior students of the composing department. It is made up of excellent examples of traditional and off-centre-axis composition.

The Lithographic Printing Section contains some fine work. It couldn't be claimed, however, that all of the illustrations represent happy selections to demonstrate the process to the best advantage. Inasmuch as the student is acquiring knowledge of the Art, no doubt he is expected to produce the best possible result with the material at hand.

Considering the Year Book as a whole, it is comprised of printing such as would be executed in any plant doing the kind of work represented in one or more of the sections, from which it will be gathered that the printing is of high utility. It is a tribute to the ability of Principal Riddell and staff in being able to impart a fine technique to ambitious students.

Register

(*Continued from Page 8*)

run". This can be illustrated by trying enameled sheets and rough-laid or eggshell-finish sheets, especially at a pretty fair speed. The rough sheet will not lose register nearly so much as the enameled sheet. It grips with less slip. Also, you may get an idea of it by setting a sheet with a very small gripper bite. Do this on a moderate speed, say 1000 i.p.h. on a fair-size press. Then speed up, and pretty soon the grippers will miss the sheet altogether. The grippers just go so fast they go beyond the edge before gripping. This movement has nothing to do with gears. When started up a press generally will not register the first sheets run, because the press has not yet got up to its predetermined speed, and all parts are not yet pulling forward as they are when it reaches speed. Frequently, a press will not register the first sheet after a trip of the impression,

especially on a pretty solid form that carries a lot of impression, because, when the press is tripped and relieved of the impression load, it spurts up in speed and the next sheet is taken too fast. By the second sheet it will have settled down to the proper speed and will again take the sheets in register.

When the writer was a cub and the two-revolution press first began to come into general use, there was a very general skepticism as to the ability of any press which took the sheet "on the run" to ever give register. This press was given the fast, plain work requiring no accurate register and the color-work went on the old stop-cylinder, and it was a long time before the two-revolution press was able to convince the skeptics.

When we have a particularly close register job to run and there is any question about the press, we proceed as follows: We set the form, get on a tympan and see that the cylinder is down solid on its bearers. Then we run two or three impressions at say 1200 i.p.h. directly on the tympan. If these are in perfect register with each other, speed up a bit and run two more impressions directly on the ones already there. If these are also in register with the first, pat yourself on the back and smile, because it's a good trick and can't be done always. Then speed up a bit more and take two more right on top of these and if they are all in register, that is all any press can do but every press will not do it. If the press registers on two or three speeds on the tympan, you have nothing to worry about so far as the bed and cylinder are concerned. This test proves positively that the bed and cylinder are traveling in absolute unison, and if they are doing that there cannot be any lost motion or lash in the gears, but that they are all *pulling forward* in perfect time. And as neither the bed or cylinder have anything to do with taking the sheet, how can the one affect the other? The rest of the problem is in the grippers—the way the grippers take the sheet, freedom from wrinkles, buckles and all such things as generally interfere with register. Even if the press registers on the tympan on only one speed, you still know that if everything else is right, your job will register at that speed.

It is not possible to vary speed on a color of a register job unless you keep the parts of the run separate and go back to the original speed on succeeding colors. But it is possible to run the first color at say 1500 i.p.h. and then, if pressed for time, run the second color at 1800 i.p.h. and not suffer much loss of register. But all of each color must be run at a constant speed, and the less stops and starts the better.

Variation in the electric current driving the press will affect the operating speed enough to interfere with accurate register. We have trouble with this factor in our plant. You cannot get register when the speed of the press varies, be it cylinder, Kelly, Simplex or what not, simply because the grippers take the sheet differently at differing speeds. The gears have the control between bed and cylinder, but the taking of the sheet at various speeds is a problem of inertia and momentum—the sheet at rest and the grippers taking it "on the run".

Print By Three Methods

Daniel Moscow, Inc., 305 East Forty-Sixth St., New York, N. Y., it is announced, is now in position to supply printing by typographical (letterpress), offset or gravure processes. A Harris LSC single color 32 by 44 offset press and a Harris 25 by 38 WN sheet feed gravure press have been added to the firm's equipment.

THE SECOND FORM-O-SCORCH NOW BEING INSTALLED IN THE BOSTON HERALD-TRAVELER

The Model "S" Semi-Cylindrical Form-O-Scorch is chosen by metropolitan dailies for best results. Faster scorching, perfect forming and greater efficiency are assured only by centrifugal force.

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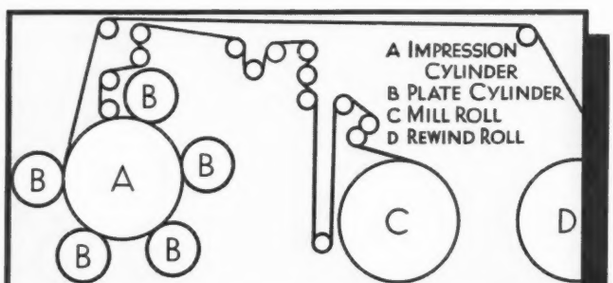
I have never seen a press start off and do perfect work at a high speed as this press has done.

5-COLOR ROLL-TO-ROLL ARC-TYPE PRESS

trouble-free from the start!

The 5-color "Three Point" Press with arc-type and web-to-rewind construction installed several months ago for a well-known wrapper manufacturer has been pronounced highly successful.

"We are more than delighted at the performance," the customer wrote us. "Our hats are off to you as master workmen."



The success of this press . . . combining accurate register with high speeds . . . opens up new possibilities for making money on wrapper printing. .

Let Kidder go to work on *your* wrapper printing problems. There are "Three Point" Presses for printing on all kinds of packaging materials . . . also offset presses and rotaries for magazines and catalogs. Send for new bulletins on the Golden Arrow Bronzer and the Chapman Electric Neutralizer.

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Patents

Numerous Interesting Specialties Allowed in Past Few Weeks

JULY-AUGUST

Book Binding:

2,009,172. BOOK SEWING MACHINE. Philip A. Frazier, Chicago, Ill., assignor to R. R. Donnelley & Sons Company, Chicago, Ill., a corporation of Illinois. Application October 12, 1931, Serial No. 568,433. 30 Claims. (Cl. 112—21).

1. In a machine, the combination of means for sewing together signatures to form a book, means operating on the signatures to cause them to extend in rounded-back-forming condition, and means for feeding the signatures in the condition to the first-named means.

Composing Machinery:

19,613. PLANETARY TYPE SURFACING MACHINE. Harry L. Meyers, Toledo, Ohio, assignor to The American Floor Surfacing Machine Company, Toledo, Ohio, a corporation of Ohio. Original No. 1,919,389, dated July 25, 1933, Serial No. 614,182, May 28, 1932. Application for reissue April 1, 1935, Serial No. 14,960. 13 Claims. (Cl. 51—177.)

1. In a machine, a fixed guide, a power actuated drive shaft mounted for rotation in the guide, a revoluble head, a plurality of rotary surfacing units mounted on the head, a driven shaft in alinement with the drive shaft, a universal joint securing the shafts together for simultaneous rotation, the driven shaft being keyed to the head to revolve the head, a flexible annular web, means fixedly securing the web to the guide, a fixed friction drive member surrounding the driven shaft and connected with the web, the web being interposed between the member and guide, and operating means for the rotary units cooperable with the fixed driving member.

2,005,748. TAPE PERFORATOR. Edward Stanley Larson, Chicago, Ill., assignor to Teletype Corporation, Chicago, Ill., a corporation of Delaware. Application July 1, 1933, Serial No. 678,587. 15 Claims. (Cl. 178—92.)

1. In a tape perforator, a perforating mechanism including a plurality of punches, a selecting device responsive to code signals for controlling the operation of the mechanism comprising selectable elements having no normal position, means for advancing a tape for each operation of the mechanism, and means effective independently of the selecting device and without altering the setting of the selectable elements for perforating single perforations and causing the advancement of the tape upon a cessation of code signals.

2,006,246. TYPE LINE COMPOSING AND PRINTING MACHINE USING CIRCULATING PATRICES. Paul Marti, Winterthur, Switzerland, assignor to firm Schweiz. Lokomotiv-und Maschinenfabrik, Winterthur, Switzerland. Application August 8, 1933, Serial No. 684,245. In Germany August 16, 1932. 3 Claims. (Cl. 101—93.)

1. In a type line composing and printing machine, in combination, a printing device having a rotatable printing cylinder, means for rotating the cylinder by steps, a resilient printing form mounted on the cylinder, a device for feeding printing paper into printing position under the cylinder between two successive printing operations of the printing device, a type line setting device, a spacer or justifier device, an inking device correlated to the printing device and adapted for inking in a set type line under the cylinder before two successive printing operations of the cylinder with the rotational adjustment of the latter unaltered, and means for driving the printing device, the printing paper feed device, and the inking device in timed relationship to print a transparent sheet fed to the cylinder on both sides during the second of the successive printing operations by contact of one side directly with the ink still present on the respective type line and of the other side with the part of the ink transferred from the type line onto the printing form during the first of the successive printing operations.

2,006,435. TYPE ARRANGEMENT FOR COMPOSING MACHINES. Otto I. Bloom and Samuel I. S. Friedman, New York, N. Y. Application May 25, 1934, Serial No. 727,420. 12 Claims. (Cl. 199—66.)

1. A type arrangement for composing machines comprising a group of meaningless letter elements which when aligned on a line-composing or single-type casting machine in group assembly of two or three, form the character of an undistorted condensed or extended Hebrew consonant without a vowel, with any required vowel, or with vowels above, in the center, or below the consonant letter or in any combination of these positions.

2,007,301. MEANS FOR MAKING SPACERS, RULES, OR THE LIKE. Frank J. Lemieux, Central Falls, R. I. Application April 26, 1933, Serial No. 667,979. 8 Claims. (Cl. 207—17.)

1. In a machine for forming a spacer, rule or the like for printing purposes, a die comprising a channel through which the material is extruded, means for feeding lubricant to the channel, and means on the wall of the channel protruding into the channel for cooperating with the material extruded for effecting the distribution of lubricant.

2,007,951. SLUG CASTING MACHINE. William Ackerman, Towners, N. Y., assignor to Mergenthaler Linotype Company, a corporation of New York. Application January 9, 1934, Serial No. 705,859. 19 Claims. (Cl. 199—54.)

1. In a slug casting machine, the combination of a mold movable from casting position during a machine cycle of operation and provided with a longitudinally reciprocable knife, and means disconnected from the knife and acting during the movement of the mold for intercepting the knife, thereby causing relative movement between the knife and the mold to trim the bottom edges of slugs cast in the mold cavity.

2,008,461. SLUG CASTING MACHINE. Richard R. Mead, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, a corporation of New York. Application May 15, 1934, Serial No. 725,704. 14 Claims. (Cl. 199—47.)

1. In or for a slug casting machine, a metal pot, including, in combination, a throat section formed with a passage through which molten metal is adapted to be forced into the mold, the discharge end of the throat section being formed with a plurality of superposed rows of discharge openings, and means arranged in the passage of the throat section for diverting the metal flowing through the passage into different paths of flow to the rows of openings.

Patent Papers:

Printed copies of Patents are furnished by the United States Patent Office at 10 cents each. Address the Commissioner of Patents, Washington, D.C., and enclose 10 cents for each patent paper wanted.

2,009,982. MORTISED MATRIX AND ASSEMBLING MEANS THEREFOR. Herman R. Freund, Brooklyn, N. Y., assignor to Intertype Corporation, Brooklyn, N. Y., a corporation of New York. Application October 26, 1934, Serial No. 750,188. 11 Claims. (Cl. 199—66.)

1. A font of character bearing matrices having parallel side faces some of which are flat and others of which are recessed on their side faces to form projections at one or both sides to support the widened portions of characters unbalanced in form, the projections being of uniform vertical extent over a part only of the width of the side faces and terminating short of the top or bottom ends of the matrices.

Feeding, Delivery, Folding:

2,005,037. PAPER WEB CONNECTING MECHANISM FOR PRINTING PRESSES. Thomas Johanceu, deceased, late of Linthicum Heights, Md., by The Fidelity Trust Company, administrator, Baltimore, Md., and John Alfred Jones, Baltimore, Md. Application April 19, 1934, Serial No. 721,358. 11 Claims. (Cl. 242—58.)

3. In a paper feeding device for printing presses the combination with means for sustaining an expiring roll of paper while the latter is being fed to the press, of means for sustaining a fresh roll of paper, means for revolving the fresh roll, a device for bringing the web of the expiring roll and the periphery of the revolving fresh roll together, means revolving with the fresh roll and a solenoid-actuated device coacting with the revolving means for operating the device that brings the expiring web and the fresh roll together.

2,005,079. SHEET FEEDER. Harry Ehlig, Pearl River, N. Y., assignor to Dexter Folder Company, New York, N. Y., a corporation of New York (1934). Original application September 13, 1928, Serial No. 305,643. Patent No. 1,829,984, November 3, 1931. Divided and this application July 14, 1931, Serial No. 550,673. 19 Claims. (Cl. 271—26.)

1. In a sheet feeder, a moving suction feed belt for separating and feeding sheets from a supply thereof, the belt having perforations formed in groups extending longitudinally of the belt and spaced apart lengthwise to provide imperforate longitudinally extending belt portions that close the source of suction to atmosphere at predetermined intervals and thereby intermit the separation and feeding of the sheets, each group of perforations serving with the belt to separate and feed a single sheet from the supply during one cycle of operation of the belt and each group including a plurality of perforations extending lengthwise of the belt and acting one after another therewith on the single sheet.

2,006,597. METHOD FOR HANDLING FRESHLY PRINTED PAPER IN ROLL FORM. Walter K. Miller, La Grange, Ill., assignor to Shellmar Products Company, Chicago, Ill., a corporation of Delaware. Application May 19, 1930, Serial No. 453,635. Renewed April 28, 1934. 2 Claims. (Cl. 101—420.)

2. The method which comprises printing a continuous web of material along transversely spaced portions, to provide spaces between the printed portions which are not printed, and simultaneously rolling the freshly printed paper together with longitudinally extending bands corresponding in position to the position of the unprinted spaces of the web of material, whereby when rolled the printed portions alternate with the bands transversely of the roll.

2,006,702. PAPER FEEDING MECHANISM. John Van Buren, Brooklyn, N. Y. Application April 30, 1934, Serial No. 723,012. 7 Claims. (Cl. 271—2.1.)

1. Means for feeding and guiding a strip of sheet material comprising parallel feeding chains mounted for movement in a horizontal plane to feed a strip of material and having a plurality of spaced pins arranged to enter correspondingly spaced perforations in the material being fed, means for feeding the strip to the feeding chains, and means positioned above the path of movement of the web and between the feeding means and the chains for guiding the material into correct feeding relation to the pins, the guiding means comprising means for guiding the strip above the paths of movement of the pins until the chains are disposed in the horizontal feeding plane and means for guiding the strip downwardly to the feeding plane and pins.

2,007,209. FOLDING MACHINE. William Jonathan Neidig, Chicago, Ill. Application July 10, 1929, Serial No. 377,255. 23 Claims. (Cl. 270—66.)

1. In a folding machine, in combination: tongue devices and wheel devices, the tongue devices being adapted to support the sheet at the folding line and having a working edge over which a sheet may be bent in a fold by the wheel devices; means for advancing the sheet into the control of the wheel devices; and timed means for causing the wheel devices to engage against the sheet in a folding action.

2007,210. FOLDING MACHINE. William Jonathan Neidig, Chicago, Ill. Application December 19, 1931, Serial No. 582,142. 36 Claims. (Cl. 270—66.)

1. In a folding machine, in combination: a forming member over which a paper sheet may be bent to form a fold therein; a member movable against the sheet to fold it thereover; means for introducing the sheet to be folded into the control thereof; and reciprocating devices adapted to advance and retract the movable member in a folding action.

2,007,731. CUTTING MECHANISM FOR PRINTING MACHINE FOLDERS. John R. Tomlin, Alexandria, Va., assignor to Irving Trust Company, permanent trustee for R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application April 22, 1933, Serial No. 667,462. 16 Claims. (Cl. 164—66.)

16. In a cutting mechanism for printing machine folders, the combination with a cylinder, a cutting blade coacting with the cylinder and operable with a relatively great radial movement with respect to the cylinder, of a resilient one-piece cutting block secured to the cylinder and having a relatively deep radially disposed longitudinally extending slot preformed therein for the operable reception of the cutting blade, the width of the slot being less than the thickness of the cutting blade and not less than one-half its thickness.

2,007,886. SHEET FEEDING DEVICE FOR CYLINDER PRINTING PRESSES. Rudolf Stussi, Glarus, Switzerland, assignor to Druckmaschinen Aktiengesellschaft, Glarus, Switzerland. Application January 31, 1934, Serial No. 709,207. In Germany February 6, 1933. 4 Claims. (Cl. 271—53.)

1. In a cylinder printing press in combination with the impression cylinder, the oscillating feeding grippers, and a laying-on table, of chains located below the table, grippers connected to the chains, slots in the table, the grippers adapted to extend upwardly through the slots and to seize the sheet to be fed, means to drive the chains, so that the grippers move along in the slots and draw the sheet to be printed to the oscillating feeding grippers, means for withdrawing the grippers to below the table at one end of their path and for lifting them into operative position at the other end of their path, and means for opening the grippers at the first-mentioned and closing them at the other end, also these means being located below the table.

2,008,049. SHEET FEEDING, FOLDING, AND GLUING MECHANISM. Edwin G. Staude, Minneapolis, Minn. Application October 4, 1934, Serial No. 746,861. 19 Claims. (Cl. 93—49.)

1. In a device of the class described, primary sheet feeding means, secondary sheet feeding means to which the primary feeding means delivers, means by which the feeding speed of a sheet delivered by the primary feeding means is reduced or by which the sheet is stopped before being operated on by the secondary feeding means, and means operable by the primary feeding means and selectively acting to advance the sheet into feeding relation with the secondary feeding means.

2,008,165. METHOD OF AND MEANS FOR FEEDING SHEET MATERIAL. Arthur Wormser, Offenbach, near Frankfort-on-the-Main, Germany. Application March 14, 1935, Serial No. 11,021. In Germany October 19, 1932. 5 Claims. (Cl. 271—58.)

Continued on Page 40

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1. A method of registering sheets, consisting in advancing a continuous bank of seriated sheets towards registering means, front registering the top sheet of the bank, holding the sheet against further forward movement, side registering the sheet, front registering the succeeding underlaying sheet, removing the top sheet, and side registering the underlaying sheet while still partly covered by the top sheet.

2,009,686. BED AND CYLINDER PRINTING PRESS. Calvert B. Cottrell, 3d, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a corporation of Delaware. Application May 11, 1933, Serial No. 670,407. 8 Claims. (Cl. 101—283.)

1. In a bed and cylinder printing press, an impression cylinder, a reciprocating form bed, means normally separating the bed and cylinder, sheet feed controlled means for bringing the bed and cylinder into printing coaction for the printing stroke of the bed, and means for causing the bed and cylinder separating means to operate to separate the bed and cylinder as the bed finishes its printing stroke.

2,009,687. BED AND CYLINDER PRINTING PRESS. Calvert B. Cottrell, 3d, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a corporation of Delaware. Application May 11, 1933, Serial No. 670,408. 16 Claims. (Cl. 101—284.)

1. In a bed and cylinder printing press, an impression cylinder, a reciprocating form bed, means normally separating the bed and cylinder, and electric means controlled by the bed for causing the bed and cylinder to be brought into and out of printing coaction on the printing and non-printing strokes respectively of the bed.

2,009,688. BED AND CYLINDER PRINTING PRESS. Calvert B. Cottrell, 3d, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a corporation of Delaware. Application May 11, 1933, Serial No. 670,409. 16 Claims. (Cl. 101—283.)

1. In a bed and cylinder printing press, an impression cylinder, a reciprocating form bed, a sheet feed controlled photoelectric unit, means normally separating the bed and cylinder, and means for bringing the bed and cylinder into and out of printing coaction, the means including a lever, a differential gear for operating it and an electric brake for the differential gear, controlled by the bed and the photoelectric unit.

2,009,707. WEB SUPPLY MEANS. David J. Scott, Plainfield, N. J. Application November 15, 1932, Serial No. 642,714. 18 Claims. (Cl. 242—58.)

14. The combination of a printing machine; web roll change mechanism: means to actuate the mechanism to effect a roll change: and a device governed by the speed of the printing machine to prevent the roll change from being effected unless the printing machine is running below a given speed.

2,010,586. SHEET FEEDER. Harry Ehlig, Pearl River, N. Y., assignor to Dexter Folder Company, New York, N. Y., a corporation of New York (1934). Application July 14, 1931, Serial No. 550,674. 16 Claims. (Cl. 271—37.)

1. In a sheet feeder, upper and lower means for feeding a bank of fanned-out sheets, a continuously driven perforated belt for advancing a sheet from the bank and extending between upper and lower front portions thereof, means for creating suction through the continuously driven perforated belt whereby the same may grip the sheet and advance it as aforesaid, and oscillating suction means disposed adjacent the belt between the portions of the bank for buckling and separating the front edge portion of the sheet from the bank and carrying the portion within the range of action of the first named suction means and the continuously driven perforated belt.

Offset-Lith:

2,005,654. LITHOGRAPHIC PLATE GRAINING DEVICE. Rudolf Fritsche, New York, N. Y. Application January 9, 1934, Serial No. 705,945. 2 Claims. (Cl. 51—9.)

2. In a graining machine for graining lithographic plates, a drum against which a plate is adapted to be fitted flatwise, a ring secured to the drum at each end, the rings projecting beyond the drum so as to present end flanges, a clamping bar extending longitudinally across the drum, the bar at the ends having hooks adapted to be hooked over the flanges, means for clamping the hooks against the flanges, and a plurality of plate clamping means carried by the bar.

2,007,571. OFFSET PRINTER. Thomas Walter Horn, University Heights, Ohio. Application April 15, 1933, Serial No. 666,298. 14 Claims. (Cl. 101—218.)

6. In combination, a frame comprising aligned horizontal supporting elements, aligned bearings carried by the frame, a hollow cylinder mounted to rotate upon the bearings, inking mechanism carried by the frame substantially within the hollow cylinder, a plate cylinder carried by the frame externally of the hollow cylinder, the hollow cylinder being open throughout a peripheral portion thereof, and means for causing the inking mechanism to apply ink to the plate cylinder through the opening in the hollow cylinder as the cylinders rotate.

2,007,588. DAMPENING METHOD AND MEANS FOR PLANOGRAPHIC PRINTING. William B. Wescott, Boston, Mass., assignor to Multigraph Company, Wilmington, Del., a corporation of Delaware. Application September 2, 1932, Serial No. 631,516. 7 Claims. (Cl. 101—148.)

1. Method of dampening planographic printing plates and like surfaces, which comprises charging a microforaminous material with an aqueous solution of glycerin and passing the substantially saturated material over the surface of the plate.

Miscellaneous:

2,005,046. PRINTING APPARATUS. Edward R. Newcomb, Niagara Falls, N. Y., assignor to The Carborundum Company, Niagara Falls, N. Y., a corporation of Pennsylvania. Application May 19, 1933, Serial No. 671,850. 9 Claims. (Cl. 101—420.)

4. A printing accessory comprising a granular coated fabric in which the grain size is of the order of magnitude of .05 millimeter in diameter and in which the granular layer is approximately one grain deep while the lateral spaces between the grains are 4 grain diameters.

2,005,742. PROCESS FOR DEINKING IMPRINTED PAPER. Pierre R. Hines, Portland, Oregon. No Drawing. Continuation of application Serial No. 625,209, July 27, 1932. This application May 25, 1934, Serial No. 727,577. 11 Claims. (Cl. 92—9.)

1. The process of de-inking paper which comprises refining and cooking the stock, with a chemical adapted to free substantially the ink particles from the pulp fiber, until tests show the stock to be defiberized and the fiber substantially freed from ink particles, effecting flocculation of the ink particles, and dispersion of other constituents by an agency selected relatively to the pH value of the stock, effecting frothing and collecting by a suitable agent, and removing the ink particles by froth flotation method

2,005,830. BACK GAUGE STOP MECHANISM. Frederick W. Seybold, Dayton, Ohio, assignor to Harris Seybold Potter Company, Cleveland, Ohio, a corporation of Delaware. Application May 23, 1933, Serial No. 672,397. 9 Claims. (Cl. 164—48.)

1. In a machine, a reciprocable tool, a carriage for moving work toward the tool in successive steps, a stop carrying member associated with the carriage for movement proportionately therewith, a fixed stop carrying member, one of the members having a plurality of spaced guides for the reception of stops adjustable in the guides, the other of the members having retractable stops equal in number to the number of the guides and adapted to engage the adjustable stops, and means operated by mechanical connections exclusively, and synchronized with the operations of the tool, for moving the retractable stops corresponding to the various guides into operative position in regular established sequence during the forward travel of the carriage.

2,005,945. EMULSION PRINTING INK AND METHOD OF MAKING SAME. Earl H. McLeod, Rutherford, N. J., assignor to The International Printing Ink Corporation, New York, N. Y., a corporation of New York. No Drawing. Application December 30, 1929, Serial No. 417,589. 3 Claims. (Cl. 134—36.)

1. An emulsion printing ink, comprising a stable aqueous emulsion that does not tend to oxide objectionably on standing in containers, is readily miscible with additional water for which it has a remarkable affinity without objectionable thinning down of the mixture; which ink, when applied to a paper surface possesses quick drying properties because of the tendency of the volatile ingredients thereof to evaporate and to penetrate into the surface to which it is applied owing to the peculiar affinity of the paper, thereby materially increasing the permissible speed of application of such ink to a paper surface; which ink does not objectionably penetrate through paper to which it is applied; and which ink, when an embossing operation is employed, has no tendency to adhere to the embossing rollers; and which ink wipes readily and does not tend to de-emulsify on standing, the ink comprising essentially a pigment and a vehicle, the latter containing a resinous binder including a water-soluble resin soap and an unsaponified resin, a volatile hydrocarbon distillate that is a solvent for the resin and water, the amount of the resinous binder present in the vehicle being at least 20%, the amount of the hydrocarbon distillate present being at least 15% and the amount of the water present exceeding 10%, by weight, of the vehicle of the ink

2,006,466. MERCURY VAPOR LAMP. Leon R. Ludwig, Forest Hills Borough, Pa., assignor to Westinghouse Lamp Company, a corporation of Pennsylvania. Application November 29, 1933, Serial No. 700,190. 9 Claims. (Cl. 176—122.)

1. An electric discharge device comprising an envelope, a pair of electrodes within the envelope adapted to maintain a discharge there-between when energized by an alternating current source of potential, means surrounding the electrodes within the envelope for confining the discharge therebetween to a restricted path comprising an elongated chamber extending between the electrodes a distance of slightly greater than the normal path of discharge, a body of normally liquid vaporizable conducting material in the elongated chamber, and means connected to the electrodes and in contact with the body of vaporizable conducting material, and energizable upon energization of the electrodes by the alternating current source to cause the formation of the cathode of an arc upon one of the electrodes for initiating a discharge between the electrodes.

2,008,763. TRANSFER. Winthrop Stanley Lawrence, Rego Park, N. Y., and Thomas H. Miller, East Orange, N. J., assignors to Kaumagraph Company, New York, N. Y., a corporation of New York. Application March 19, 1932, Serial No. 600,066. 6 Claims. (Cl. 41—33.)

6. In the art of making a transfer, those steps which consist in impressing a marking having a fusible base, upon a paper body, and while the marking is unfused and moist and adherent, the marking then containing a solvent and then applying non-fusible pigment material in free powder form to the surface of the marking before the marking has dried, and then permitting the solvent to evaporate, said pigment material being a fine metallic powder.

2,009,860. METHOD OF JUSTIFYING TYPE LINES. John Q. Sherman, Dayton, Ohio. Application September 1, 1930, Serial No. 479,123. 4 Claims. (Cl. 199—51.)

1. As an article of manufacture means for adding to the ends of typed lines sufficient characters to extend the lines to predetermined length, such characters being indicative of the space elements for justification of such lines, comprising a transparent chart having thereon a plurality of characters arranged in columns spaced apart horizontally in agreement with the lineal spacing of the type of a typed line, the characters being spaced apart vertically in the columns in agreement with the spacing of successive lines of a body of typed matter, such chart being applicable to a page of typed lines with such characters forming continuations of the lines to extend the lines to predetermined extent.

2,010,442. WEB CUTTING MECHANISM. William E. Sharkey and Harry Peters, Middletown, Ohio, assignors to The Raymond Bag Company, Middletown, Ohio, a corporation of Ohio. Application October 31, 1930, Serial No. 492,489. 13 Claims. (Cl. 164—68.)

11. In a machine for dividing a continuously moving web into sections of predetermined shape, a cutting device having means to sever the web across the entire width thereof and separate the web into sections, a second cutting device arranged beyond the first mentioned cutting device in the direction of travel of the web and comprising a movable support and blades secured to the support for movement thereby into engagement with each section of the web, the blades being arranged in intersecting relation to completely sever from the web upon each operation of said second cutting device a portion of predetermined shape, and means for actuating the cutting devices in timed relation, the cutting devices being so arranged with relation one to the other and their operation being so timed that the portion will be severed from each section before that section is severed from the web.

2,010,732. SHEET HANDLING APPARATUS. Mark Mandusic, Crestline, Ohio, assignor of one-third to John R. Sawyer, Jr., Mansfield, Ohio. Application September 11, 1934, Serial No. 743,594. 7 Claims. (Cl. 271—88.)

1. A sheet handling and piling apparatus comprising confronting frames, depending arms pivotally mounted intermediate of their ends and supported by the frames in the space between the latter for lateral movement, sheet receiving rails secured to the lower ends of the arms, trip fingers, means for feeding sheets to the rails and into engagement with the trip fingers, levers fulcrumed intermediate of their ends and carried by the frames above the rails, rods carrying the trip fingers and engaged by the inner ends of the levers, and a jointed connection between the other ends of the levers and the upper ends of the depending arms, as and for the purpose set forth.

Plate Making

2,006,665. FINISHING MACHINE FOR STEREOTYPE PRINTING PLATES. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Original application July 9, 1926, Serial No. 121,403. Divided and this application September 8, 1931, Serial No. 561,634. 7 Claims. (Cl. 29—21.)

1. The combination of a frame adapted to swing about a vertical pivot at the center, means on the frame for supporting a stereotype printing plate, means on the frame for shaving the rear surface of the printing plate, rolls at a distance from the pivot for supporting the end of the frame, a track on which the rolls are adapted to run and means for swinging the frame on its pivot to bring it to either end of the rack.

2,007,566. ART OF PRINTING. George H. Ernewein, Buffalo, N. Y. Application March 10, 1932, Serial No. 598,043. 4 Claims. (Cl. 101—401.3.)

2. The art of preparing matrices comprising the backing of a plate having a design face with an underlay of varying thicknesses corresponding to the different shades to be employed in the printing and subjecting the same to heat and pressure to soften the plate and bring its face to relief, applying a matrix member over the relieved face, subjecting the whole to pressure to bring the matrix member into relief, coating the back of the matrix with a relief preservative compound to become dried and hardened by the application of heat, and then subjecting the whole to heat and pressure, to dry the matrix while still in contact with the relieved face of the plate.

2,008,819. MATRIX ROLLING MACHINE AND METHOD. Curtis S. Crafts, Oak Park, Ill., assignor to The Goss Printing Press Company, Chicago, Ill., a corporation of Illinois. Application February 6, 1934, Serial No. 709,925. 18 Claims. (Cl. 101—17.)

1. The method of forming a stereotype matrix which includes positioning a flong over the form and resiliently urging a cylinder over the flong while pressing the flong against the surface of the form by the cylinder, whereby the speed of the cylinder is varied to compensate for any unevenness in the back or top of the flong.

4. A matrix rolling machine including in combination a pair of cylinders spaced apart and superposed one above the other, a bed for supporting a form geared to one of the cylinders

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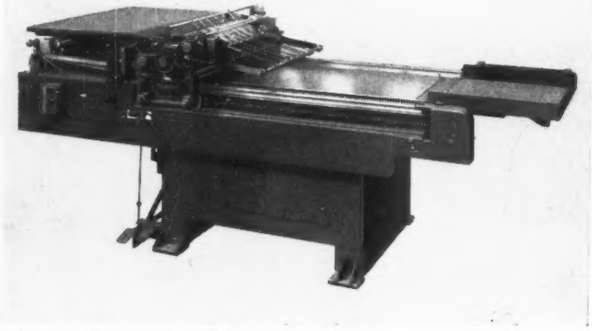

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and positioned between them, and means for resiliently driving one of the cylinders including resiliently movable gearing interconnecting the cylinders so that the peripheral speed of the upper cylinder is approximately that of the bed.

2,009,331. PROCESS FOR THE PRODUCTION OF RAISED PRINTING FORMS. Edmond Uher and Stefan Frankel, Augsburg, Germany; said Uher assignor to Externa S. A., Lausanne, Switzerland, a corporation of Switzerland. Application November 3, 1932, Serial No. 641,099. In Germany November 9, 1931. 1 Claim. (Cl. 41—25.)

A process for the production of relief printing surfaces having a single discontinuous printing plane, consisting in converting a light-sensitive colloid layer on a flexible support into a stencil pattern by photographic means, the stencil pattern being completely pierced at the places corresponding to the raised portions of the printing surface, applying the stencil pattern to a rigid support having a very accurate plane surface to correspond to the printing plane of the printing surface to be produced, with the flexible support interposed between the colloid layer and the rigid support and forming the printing surface by applying a moulding material to the stencil pattern whereby the discontinuous printing plane of the printing surface is formed by the moulding material which comes into contact with the exposed portions of the rigid support at the bottom of the pierced openings of the stencil pattern.

2,009,439. STEREOTYPE CASTING MOLD. Robert T. Edwards, New York, N. Y.; assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York; Irving Trust Company, permanent trustee. Application November 18, 1931, Serial No. 575,769. 10 Claims. (Cl. 22—5).

1. In a stereotype plate casting device, a fixed mold member, and two movable mold members arranged to swing about a common axis and alternately cooperate with opposite faces of the fixed member to form casting molds.

2,010,042. METHOD OF MAKING A PRINTING MEMBER. Charles P. Stirling, Wilmington, Mass., assignor to Oxford Varnish Corporation, Detroit, Mich., a corporation of Michigan. Application November 9, 1931, Serial No. 573,769. 3 Claims. (Cl. 95—5.7.)

2. A method of producing printed plates comprising preparing a photographic reproduction of the subject through a half-tone screen, exposing a carbon resist to the action of light through a photogravure screen and through the photographic reproduction whereby a resist is produced in which the area of the hardened gelatin will vary in accordance with the tones of the subject, the gelatin being unaffected in minute dots of varying area, the area of the dots in no case exceeding the area of the opaque portions of the photogravure screen, and thereafter etching a printing member through the carbon resist.

Printing Presses:

19,642. PRINTING PRESS FOR PRODUCING WAX CARBON SPOTS ON SHEETS OF PAPER. George A. Rutkoskie and Nelson S. Welk, Athens, Ohio, assignors to The McBee Company, Athens, Ohio, a corporation of Ohio. Original No. 1,961,829, dated June 5, 1934, Serial No. 652,284, January 18, 1933. Application for reissue May 29, 1935, Serial No. 24,516. 25 Claims. (Cl. 101—357.)

1. In a printing press having an ink fountain, an ink fountain roller, a rotating vibrating roller, a ductor roller adapted to intermittently contact the ink fountain roller and the vibrator roller, form rollers, shafts for the rollers, and mechanism for operating the press; a friction gear on the shafts of the vibrator roller, ink fountain roller and ductor roller, means to intermittently rotate the ink fountain roller in such a direction that the surface presented to the ductor roller moves in a downward direction, means to actuate the first named means, whereby the ink fountain roller may be rotating when the ductor roller contacts the ink fountain roller, means for timing the contact of the ductor roller so that the surface of the vibrator roller presented to the ductor roller is moving in an upward direction at the time the ductor roller contacts the vibrator roller.

2,005,216. CYLINDER PRESS MOTION. Arthur G. Bowles, Oakland, Calif. Application February 14, 1934, Serial No. 711,147. 13 Claims. (Cl. 101—282.)

1. A cylinder press movement comprising a reciprocable bed, guides supporting the bed means for reciprocating the bed, a rack secured along the edge of the bed, an impression cylinder geared to the rack in the printing stroke, means disengaging the cylinder from the rack during the return stroke, the bed being of a length to revolve the cylinder more than one revolution thereagainst during one printing stroke for printing in register on one place on the cylinder from forms in tandem, means continuing the revolution of the cylinder about one turn during the return stroke of the bed, and means reengaging the cylinder gear to the rack in register for repetition of the printing stroke as above.

2,005,916. INKING MECHANISM FOR PRINTING MACHINES. Frederick Lamatsch Grantwood, N. J., assignor to Irving Trust Company, permanent trustee for R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application January 12, 1933, Serial No. 651,295. 15 Claims. (Cl. 101—366.)

1. In an inking mechanism for a printing machine, an ink cylinder, an ink distributing bar, means for urging the bar towards the cylinder, and stops carried by the bar and adjustable to regulate the amount of clearance between the bar and the cylinder, and means for indicating the degree of adjustment.

2,006,360. INKING MECHANISM FOR PRINTING PRESSES. Frederick Lamatsch Grantwood, N. J., assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation, New York; Irving Trust Company, permanent trustee. Application October 17, 1931. Serial No. 569,489. 2 Claims. (Cl. 101—365.)

1. In a printing machine, the combination with an ink cylinder, of an ink rail, ink conveying tubes nested in and supported by the ink rail, a throat bar detachably secured to the ink rail and having an arcuate surface conforming to and co-operating with the periphery of the ink cylinder, means supported by the throat bar for conveying ink to its arcuate

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surface and the periphery of the ink cylinder, the means being detachably secured to the tubes.

2,006,628. WEB CONTROLLING DEVICE FOR PRINTING PRESSES. Allan J. Cline, Chicago, Ill. Application March 11, 1933, Serial No. 660,398. 16 Claims. (Cl. 242—75.)

1. A web controlling device for printing presses, comprising a movably mounted roller position in a loop in the web in advance of the point of entry of the web between the press cylinders, the roller being movable by its weight to take up slack in the web between the web roll and the press and to maintain uniform tautness of the web, thereby eliminating vibration thereof at the point of initial contact of the same with the printing cylinders, the roller being free from connection with tension mechanism for retarding rotation of the roll and being quickly responsive to changes in the tautness of the web irrespective of irregularities in the form of the roll, and a dashpot connected with the roller for dampening the movement thereof.

2,007,526. PRINTING MACHINE. Carl A. Flood, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Massachusetts. Application October 25, 1933, Serial No. 695,116. 10 Claims. (Cl. 101—96.)

1. Printing mechanism comprising a frame, a plurality of printing wheels mounted on the frame, a plurality of indicating wheels, means operatively to connect a selected wheel with a corresponding indicating wheel to permit simultaneous adjustment thereof, the printing wheels being arranged to print a line of indicia, a set of auxiliary printing wheels, a set of corresponding auxiliary indicating wheels, and means selectively to connect one of the auxiliary printing wheels and a corresponding auxiliary indicating wheel to permit adjustment of the auxiliary printing wheels, the auxiliary printing wheels being arranged to print the line extending transversely to the line printed by the first-named printing wheels, and means cooperating with the printing wheels to effect a printing operation.

2,007,857. PRINTING MACHINE. Arthur William Harries, Twickenham, England, assignor to Lynton-Brooke Company Limited, London, England. Application December 2, 1932, Serial No. 645,489. In Great Britain February 1, 1932. 6 Claims. (Cl.101—228.)

1. In a printing machine, a cylinder, a printing plate on the cylinder having a gap in its surface, an impression cylinder, a segmental plate, means for securing the segmental plate to the surface of the impression cylinder, the segmental plate cooperating with the surface of the first mentioned plate, and means engaging an end of the impression cylinder to adjust the impression cylinder so that the position of the segmental plate may be changed with respect to the gap.

Equipment

Continued from Page 20

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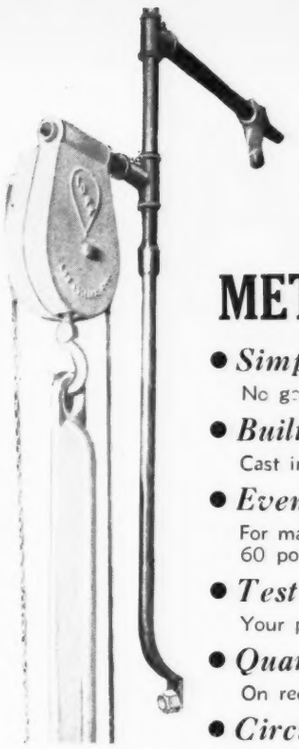

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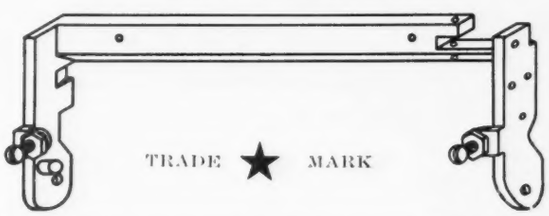

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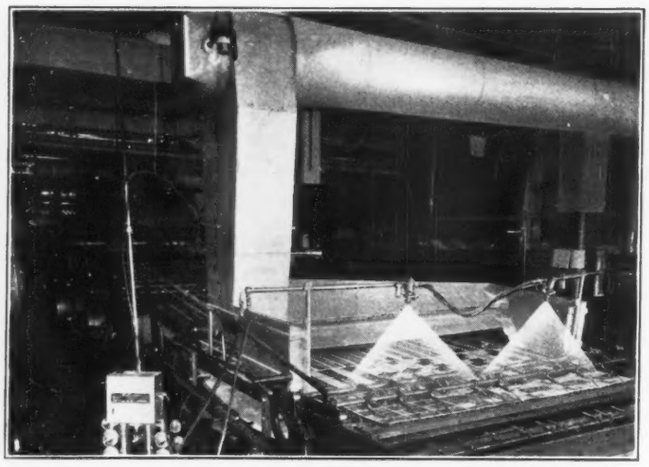

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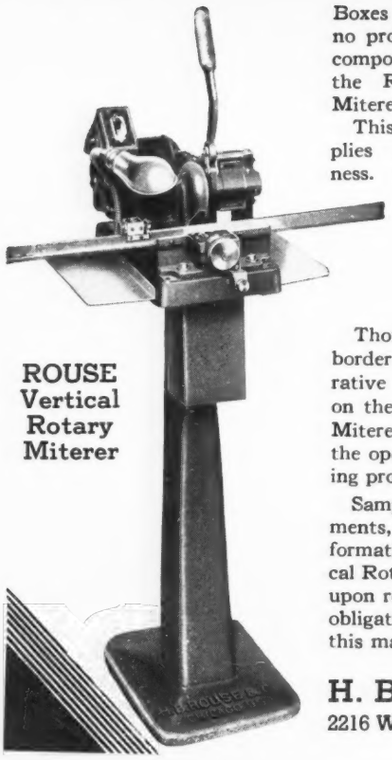

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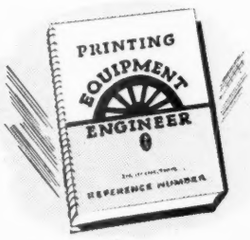

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